THE

MASSACHUSETTS TEACHER,

AND

JOURNAL OF HOME AND SCHOOL EDUCATION.

OCTOBER, 1856.

LATIN AND GREEK.

WILL the question of the utility of Classical Learning ever be settled? We suppose not. We certainly have not the presumption to believe that we can put it at rest: but we never hear it mooted without the feeling that on one or both sides some very important consideration or other is left out. We propose to offer here a few thoughts supplementary to the usual arguments that are almost sure to be urged on the different sides of the debate.

But first, what is the question? — for it seems to us that a great many different ones are apt to get mixed together, and that this is, to a great extent, the cause of such wide differences of opinion. Suppose we state it to be the question of the utility of Classical Learning in a system of education, the further question arises, What system? — and if we say an American system, we come no nearer; for no one, we presume, will argue that there is any one system of training that will suit all circumstances, even of a single nation. Here, perhaps, in truth, lies the difficulty, — that the idea is so prevalent, that somewhere there is to be found some one perfect mode of training, — laws suitable to every possible condition, and applicable to every possible want. As though one should say, Here are a great number of colts, and though, to be sure, they are of various kinds, here a heavy plough-horse, and there an Arab of the desert, yet inasmuch as they are all horses, we must somewhere find some one uniform and infallible method of training, which shall be applicable to all alike, no matter how great the variety of peculiar characteristics. And if some one should still urge, that even in this case there must be some general principles of horse-training, applicable to every horse alike, *quoad* horse, we grant it; but we ask him to examine how far

such general principles will carry him towards the *complete* training, say of a Pennsylvania dray-horse on the one hand, and a full-blooded English race-horse on the other. We do not deny that to a certain degree the treatment would be the same; but we take it the dray-horse never would appear upon the course, nor would the racer be put to dragging stones to improve his speed.

Just about here, we think, in a course of human training comes in this question of Classical Learning; and it is from the misplacing of it, — relegating to a position amongst general principles what is in truth, in great part, a specialty, and in not clearly distinguishing between the general and the special question, that the chief difficulty has arisen. Is a training in two ancient dead languages a necessary part of the education of every man, and is he only half a man who misses it? — this is one question. Is a training in these languages a necessary part of the education of certain classes of men who are to be engaged in certain special pursuits? — this is another. Does the human mind forever remain but partially developed unless it has been disciplined by the study of these languages, — or has the man who has received a training in them acquired one out of many accomplishments, used one out of many instruments, all equally good?

The defenders of Classical Education are bound to show, if they would maintain its exclusive superiority, that it contains certain elements essential to *all* thorough mental development, and which cannot be found in any other instrument of training. They must point out those parts of their system which belong to the universal principles of human culture. We think they can do so, but that this will not carry them so far as the advocates of Classical Learning generally claim to go. Taken broadly, all human culture may be said to be divided into two distinct parts, and to embrace, first, a training in *things*, and secondly a training in *words*. Our form of expression is perhaps open to criticism, but by *things* we mean all the material, of whatever sort, upon which human thought can be employed, and by *words* we mean every mode by which the human mind can *express* its thought. Materials for thought — expressions of thought — these are the subject-matter of education.

Now our knights of the gold and silver shield are very apt to say to each other, — You, my friend, are cramming your boys with mere empty words; what better are they for that? And the other answers, — But you, my friend, are filling your boys' minds with mere gross, earthly, material, utilitarian things; how will they ever become intellectual and spiritual men by

that? — and the controversy goes on because each is apt to be very much in the right.

In truth we believe there is an element in both systems which belongs to the general and fundamental part of all education of whatever kind, and another element in each, which does not belong to the general part of education, but to one or the other of its special departments; and it behoves us carefully to separate the two. For how can any education be conceived that does not embrace a training in the knowledge and use of language? And what, on the other hand, is a knowledge of language, without a corresponding knowledge of the objects about which it is employed?

We remember once having heard an unfortunate philosophical-instrument maker attempt to give a lecture upon certain principles of physics. He was surrounded with the apparatus he was engaged in making and using every day, and whose principles we have no doubt he thoroughly understood, but for want of all development of the faculty of expression, he blundered, stumbled, lost himself in a maze of unintelligible description, and at last gave up in utter despair, leaving his audience no wiser than he found them. Here was an extreme case of a practical education in things. Examples of education in words are unfortunately too common to need specifying; we may perhaps be allowed to refer generally to about half the graduates of colleges immediately after they have left college halls, and before they have begun that rough training in realities which life has in store for them.

We hold it then as a settled principle, that a training in the knowledge of things material and spiritual as the subject-matter of thought, and a training in the knowledge and use of language as the instrument of thought, are both essential and fundamental parts of *all* education. The question then comes, What part do the two ancient languages, Latin and Greek, play, in an education in the use of language? They are not our mother tongue, and we shall never use them directly, — that is plain. What are they good for?

To answer this question we must examine more closely into what is meant by the study of language. Now if language is the instrument of thought, without which, as some maintain, thought would not even be possible, then it must be the representative of all the operations of thought; and this gives it quite a new importance. For if this is true, the study of language becomes the analysis of thought, and the teaching of language is the teaching how to think. Of what use will it be to furnish the mind with the materials of thinking, if we do not teach it also skill in the best methods of their use?

If, then, by means of the teaching of language we are to teach young people how to think, we must next cast about us to ascertain what language or languages are the best instruments for that purpose. We grant willingly that our pupils will seldom or never have occasion to call a cow, or a house, or a horse, by any but their homely vernacular names, and that it is a small addition to real knowledge to know what they are called in Sanscrit or Tongataboo. If to heap up a knowledge of mere names were all, it were of small value to any man to be able to say nothing skilfully even in forty or five hundred tongues. We grant still more that it is of the utmost importance to teach our pupils to think, not in some foreign, dead, ancient, and disused tongue, but to teach them to think, and to express their thoughts nervously, forcibly, and well, in their own mother-tongue; and for nine-tenths, or perhaps ninety-nine hundredths of pupils, this is the sole and only object: and to accomplish this we would teach them all—*Latin*.

We have a great horror of what Macaulay calls *Johnsonese*, meaning that peculiar tongue in which the famous Dr. Johnson chose to express himself; and we think Milton's prose works anything but a model of good English writing,— nevertheless we would teach our boys Latin. For first we think it is quite impossible to know our mother-tongue adequately without it, so great a part of mother-tongue having come directly or indirectly from it; secondly, we doubt the possibility of learning the logic of language, which is another phrase for the method of thought, adequately through the study of *one* language, and least of all our mother-language; and, thirdly, we believe the Latin, as far as it goes, to furnish a better and clearer model of that logic than our own. If space allowed we might enlarge upon all these reasons.

But the Latin is the subordinate element in our mother-tongue, and therefore, as a further, and very important, part of their training in language, we would have boys study Anglo-Saxon, the mother of our mother-tongue. We would have them learn thoroughly all the root-words, forms, and inflexions and peculiarities of structure the English has derived from it. How will they know their own language without? Here many must stop for want of time; but want of time is the only good reason. For Latin is a poverty-stricken tongue compared with the beautiful Greek. Let all boys, then, who would know the glory and beauty of antiquity, all boys who would grow up to a full and finished development of mind, all boys who mean when they are men to be refined and *gentle*-men, men of cultivation and men of thought, however homely may

be their occupation, — study Greek; and with the same limitation, we have not the least objection to Sanscrit, the great-grandmother of all. On the contrary, every youth will know them all better, even down to his own, by knowing a little or a great deal of Sanscrit.

We suppose our readers will gather our meaning. We would have boys (and girls) taught, not Latin and Greek, nor yet English, Saxon, or Sanscrit, but *language*, and the use of it, by means of these, or some of these. Let them write or speak afterwards what tongue they please, or carry the study of any as far as they please, but teach them all language, and the use of it as an instrument of thought, as fully and completely as possible.

But it is one thing to teach Latin for its own sake, and another thing to make use of Latin as a medium for teaching language, and this is a distinction we think very often overlooked. Why do you bring up your boys, it is often asked, just as if they were all to be Greek and Latin professors, when the chance is that ninety-nine in a hundred of them will never look at a Greek or Latin book again as long as they live? and the question is a just one. We would answer it by saying that if we had our way, we would *not* teach them Greek and Latin *as if they were going to be professors*, but in another way. We would combine it closely with the study of their own tongue, and never carry it on so fast or so far as to destroy the just proportion it should bear to other studies, and to the pupil's development of mind. Is this always done in Classical Schools? We have only to look at the poor little boy, as we so often see him, undergoing the process of cramming Latin Grammar, to answer, No. The study of Latin is mistimed and mismanaged through a false notion that this is the only way to attain thoroughness. Perhaps it is, to attain the thoroughness of a professor, whose life is to be devoted to the subject, though this we doubt; but the boy is not to be a professor, or, if he is, the time has not yet come for that sort of thoroughness which consists in learning all the minutiæ of the language. We believe that it is this pedantic mode of teaching which has brought the study into discredit, and not anything that really inheres in the study itself. It may be made as useful and interesting to boys as any study whatever.

We make a distinction, then, between the teaching of language and the teaching of *a* language. The one belongs to universal education, and cannot be begun too soon or carried too far. The other may be a specialty, governed by circumstances, and belonging to a particular and rather advanced stage of

youthful training. Moreover, it will rarely be pursued successfully if the previous general training in language has not been begun, and if it is not carried on, in all its preliminary stages, in subordination to, and harmony with that more general and more important object.

We do not believe that the study of ancient or modern languages should form the chief, much less the only pursuit of youthful minds, or that it should be begun by tender and immature ones, with an exclusive attention to abstract grammatical forms. One might as well confine himself to a skeleton, and call it the study of the human body. Yet how many boys are sacrificed to this pedantic method! We have in mind now a sturdy and successful young merchant whom in his and *our* youth we endeavored to bring up — by hand as it were — on an exclusive diet of Latin and Greek. We almost starved the poor boy, but Nature rebelled before it was too late, took our pupil to herself, and the counting-house and the active world have made a man of him. Many are not so fortunate, and this it is which fills our colleges with crammed dunces, who take to idleness and evil courses, not because Latin and Greek are bad studies, but because they have been disgusted with them by the pedantic way in which they have been taught. There are not two sorts of minds, as many people seem to think, the one exclusively practical, and whose intellectual diet should consist wholly of things and "real" studies, and the other exclusively theoretical, who must be brought up wholly on words. If we take the mass of healthy-minded boys of average ability, omitting all exceptional and strongly marked cases, we believe that one thing can be made of them as well as another, and that the right *preparatory* course of training will suit them all; and this preparatory training we would have embrace a most thorough course in language, but we would include, — and they should proceed *pari passu*, — the study of many things besides. Let their course diverge when their future calling comes in sight, not when they begin the Latin grammar; and that will be the time to begin to enter thoroughly into the minutiæ of the ancient tongues, and not, as is so often attempted, at the outset of the study.

We hope we shall not be understood as objecting to the thorough study of Latin and Greek grammar, or confounded with Hamiltonian, interlinear, study-made-easy empirics. We do not think the grammars are studied half thoroughly enough. It is the method and the timing of the instruction that we object to, — not grammar, but grammar out of place. It is the hurried, forced, premature, half-ripe scholarship

of this country, that has brought sound scholarship into discredit. Give the classical boy his rights. Let him learn what the English boy does, and learn it as well. Let him know common things, and study the real objects about him, which always attract the youthful attention first and most strongly. Let him have his fill of such studies, and do not hurry his Latin and Greek, and we believe time will be gained, not lost, and we shall hear less about the worthlessness of Classical Learning. W. P. A.

SUPERINTENDENCE OF SCHOOLS.

[We take the following interesting letter by the Hon. Henry S. Randall, formerly Secretary of State, and Superintendent of Public Instruction in New York, from the Wisconsin Journal of Education. We do not wish, however, to be understood by printing it, to commit our paper to the advocacy of this particular form of superintendence. — A.]

CORTLAND VILLAGE, N. Y., July 31st, 1855.

Hon. A. Constantine Barry, Supt. of Public Instruction:

DEAR SIR: — Yours of the 14th reached me to-day. My opinion is clear and decided, that the most perfect system of public instruction which can be devised in this country, is that which for a time prevailed in this State, viz., a town superintendent in each town; one or more county superintendents in each county — (say one for each assembly district) — and a State Superintendent. You are undoubtedly aware of the duties of these several officers under our system, and the legal powers and judicial jurisdiction that were conferred on them. The last (which I believe has not been imitated by several States which imitated the mere form of having officers called by their names) was, if not the most important feature of the whole, at least that one without which all the rest amounted to comparatively nothing. You must clothe your school officers with authority if you wish them to have weight in the community and be looked up to; and then, again, there can be no such thing as successful schools where any quarrelsome man in the State can plunge a school district into contention and litigation in the ordinary courts of law. Our laws did not prevent an aggrieved party, in very many cases, from going to a court of law.

But it opened another class of courts to him, where there were no lawyers, no costs or fees, and no wire-drawn technicalities; in short, where a man, familiar with schools, and who ought to be familiar with school laws, — who ought to be above local excitements and paltry prejudices, — acted as a judge, a jury, a court of conciliation, a court of law, a court of equity,

and finally, as a firm and sensible *friend of all the parties!* Our county superintendents answered to a county court, and the few appeals that went up from their decisions, went to the State Superintendent, who in school cases (commenced before a county superintendent, or before himself,) answered to a court of appeals.

In our State he was and is an officer, within his jurisdiction, the most absolute known to our laws. No legislature, perhaps, would ever at once, and directly, have conferred such powers. It grew gradually out of circumstances, and out of the necessity of the case — *unless* the schools were to be swamped by litigation, and unless the vast machinery necessary to carry on nearly 1200 schools, and to pay annually from the public treasury over a million of dollars, was to be left to fall into irregularity and inefficiency. And never have our people complained of the high and summary powers of the State Superintendent. In the few questions ever raised on the subject, they have invariably stood by him. Indeed, I hardly now recollect an instance of such a question getting to any extent before the public, unless in the case of my decision, in the case of Quigley *vs.* Gifford, (on the subject of compelling Catholic children to read the version of the Bible used by Protestants, and to attend Protestant religious services.)

This is a question on which so much sensitiveness exists in the public mind, that my decision called out a few public murmurs; but the newspapers of the State, almost in a body, without reference to any party or sect, rushed to my defence and sustained me triumphantly. Our State Superintendent always has the flood tide of public sympathy in his favor, — and he must decide *outrageously* not to have the entire community on his side.

I don't remember, and have no statistical table before me to show, how many cases were appealed annually from the county officers to the State Superintendent, while we had county superintendents. (The latter office was abolished before I became State Superintendent.) I know, however, they were very few. I can speak for this county, for the two terms in which I held its superintendency. There was not a single case appealed during those two terms. Nay, there was scarcely a case carried out in form before me. When I found one was arising, I always asked the parties to wait until I could come on the ground and talk with them face to face on the subject. In nineteen cases out of twenty they assented to this, and I have not a single case in recollection where I failed to settle the matter to the comparative, and frequently to the entire satisfaction of all. I presume this was very much the same

over the entire State. I would not give a farthing for a system where the officers are not armed with proper powers. I do not mean the mere power of advising, (if that can be called a power,) but with authority to enforce, by removals from office, by withholding the public money, &c. It is the sheet anchor of any efficient system.

Our county superintendency operated admirably. No intelligent man will now deny this. When the law first went into effect, that very able man, John C. Spencer, was superintendent. Through his efficient deputy, Mr. Samuel S. Randall, he solicited able and public-spirited men throughout the State to become candidates for the local superintendencies. Many a man did so, and was elected, (by the supervisors,) who "would not have looked at" what many at the time would have considered much more important offices. Many of them were, or had been teachers, but they were not a band of opinionated, crotchety pedagogues; they were of general information, of knowledge of the world, of standing. They were not men who could be sunk down into agents and puffers for book publishers! Two dollars a day (and no margin for "roast beef,") paid their horse hire, and for their time and efforts they found their pay in the good which they daily saw themselves accomplishing! Oh, sir, I look back with delight to a period of my life when I was facing storms, breaking through winter drifts, going without regular meals, to bear what I may term the missionary cross among the hills and valleys of this country.

How the "new officer" was dreaded at his first approach by fossil schoolmasters and jealous town officers! They had some occasion to dread him. I remember well my first visit to the town of —— to examine teachers. That was before we had town superintendents, and while we had three commissioners and three inspectors in each town. In the town of —— were all my political and personal friends, who therefore came out very cordially to meet me at the examination. They were the leading men of the town; two of them decidedly its magnates. One of the magnates had a daughter, and another a sister, to be examined. Both of the young ladies had taught for several seasons, and were not aware that it was necessary for *them* to think of looking over their studies or "brightening up" for the examination. Their father's and brother's friend, — the man whom theirf athers and brothers had supported for office reject them? — The idea was preposterous! I prolonged the examination half an hour, revolving bitterly in my own mind how I should perform my duty with any degree of

grace. Seeing no way to do this, I finally shut my eyes and took the leap. I rejected the entire class. Had a stunning clap of thunder broke from that clear April sky, there would not have been such a momentary look of surprise. The next instant mortification and wounded feelings filled the room with sobs. I escaped; but then I had accepted an invitation to take tea and stay over night with magnate number one. Here was a new trial. I marched over, as cool (just about) as a soldier mounting "the imminent deadly breach," with Hyder Ali or a Russian garrison on the other side. We got down to the tea table. The 'Squire evidently had a terribly choking sensation about the throat. Finally he thought he must relieve his mind, and he said, — "Randall, what did you reject ——— for?" At that moment ——— entered the room, with eyes redder than another Niobe's. Said I, "You hear your father's question; can you answer it for me?" —"I suppose, sir, because I was not qualified," was the reply. "Exactly," said I; "'Squire, be good enough to pass me the bread."

The next morning ——— and two other rejected and dejected ones were started off by their parents for the Academy. I told them I thought with two or three weeks of rubbing up they would "pass muster." But no, they had made up their minds that they would be beholden to no man's lenity in future. They went to the Academy. They stayed until they became polished scholars, and on two of them I afterwards conferred State certificates, as teachers of the highest grade of attainment and practical skill. Now for the moral of this anecdote. I knew that the law creating county superintendents was terribly unpopular in the town of ———, even before I came down upon them "like a wolf on the fold!" They thought it a terrible thing in theory to clothe a "central" officer with such powers, and certainly they had found it no joke in practice! So when a few months afterwards I turned my horses' heads into the quiet little valley of the ———, I could not but reflect with what secret if not open aversion I should be received in the schools. However, remembering "faint heart never won" anything worth having, I drove straight to the 'Squire's and "put up." His nephew, a fine young man, was the new town superintendent. On I went for two or three days through the schools, calmly and firmly adminstering praise or censure as I thought circumstances demanded. The teachers quivered and blanched a little at the outset, but all were deeply respectful, and finally a good many of them got on pretty good terms with themselves and with me before the examination of their schools closed. The trustees and people turned out to meet

me. They bore the rebukes I administered where I thought it necessary, for the bad condition of the school-houses, libraries, &c., with a capital grace, and many asked me home with them. Finally, I remarked to the town superintendent that I met a more cordial reception than I expected, after such an *opening* in the town. "Oh, sir," said he, "that opening revolutionized our town. A petition has been sent here from abroad for signers, to have the legislature abolish the county superintendency. Our people have mostly signed a remonstrance against its abolition. They say when disinterested officers are sent in, and justice comes evenhanded on big and little, and teachers are made to earn the worth of the money, the law must be a good one, and they are ready to meet the extra expense." The next time I entered that town I was met by a convocation of schools, arranged in their holiday bravery, banners waving and a band of music alternating its strains with songs and hymns, written for the occasion, pealed forth by the entire body of the children of the town. And foremost in the demonstration, were the rejected teachers of the preceding season.

Indifference warmed into interest, and interest swelled into enthusiasm in our schools; and such I believe to have been the history of the county superintendency in a large proportion of the counties of the State, — everywhere where competent men filled the office. But a feeling of deep hostility was manifested against the law from the outset. In some counties, miserable officers were appointed. In others, it was claimed that they depreciated after the first incumbents retired. But, independently of all such considerations, there is a prejudice among our people against *centralizing* office, and a most salutary one it is, if not carried to an improper extent, or into improper departments. Each town desires to be a little commonwealth in itself, and to submit to just as few outside officers as may be. Then again the central office is held, and its pay and honors are monopolized by one; division makes offices and honors for many. I 'll wager that I could get up a powerful petition to abolish the office of sheriff, and put in his place a town officer to discharge the same duties in each town! We New Yorkers endure some old central officers, because we have got used to seeing them, but I assure you we shall create very few new ones! Well, this idea is the very bulwark of liberty, and so let us endure it even where it operates a little unpleasantly. But now the fight is over, and so sad a sequel has followed, I believe thousands who warmed up against the county superintendency, would now remain quiet. If a legislature should now quietly pass the law over again, I doubt much whether

it would call out any serious opposition. The truth is, the present system is a failure, and the blindest will before long see it. It is not even as good, in my opinion, as the old one, where we had commissioners and inspectors. Then, as the office was so divided that little labor fell on each, and the pay was an object to none, the first men in each town were willing to serve. Educated professional men formed a large proportion of these officers. If they did little, they did it with good sense and with good taste. They did not belittle anything.

Now, in the hands of a town superintendent, there is a considerable range of duties devolving on one man. The pay is too inconsiderable to employ a man who considers his time of any value. There is not scope enough to the office to invite the labors of philanthropy. Many of our town superintendents are well qualified men, but an unfortunately large proportion, too, are superannuated teachers, who never were qualified to teach a school, and others on whom the towns have bestowed the offices because they are too feeble to work, lame, or poor, and being persons of excellent character, this has been thought a good way to provide for them. Of course I do not mean that these reasons would often induce a town to elect a man wholly unqualified. But it has induced them to elect men not sufficiently qualified. Unfortunately the town superintendents are nominated in the political caucuses just like the other town officers. When the struggle comes between two, — one poor or unable to work, —and when the body of the voters have had no opportunity to know anything really of their respective qualifications, you can readily see how natural it would be for any one to vote for the person to whom the office would be considered a kindness.

The town superintendents, as a body, are not nearly so well qualified as they were while the county superintendency remained. The latter officer kept up a feeling for improvement which induced the people to think far more about, and care far more for the qualifications of their officers.

In our cities, villages, and in some other favored places, the great reformation which began in our schools with the county superintendency, is still kept on. Our State and town teachers' associations do much to keep the vestal fire burning, — but my deliberate judgment is, that the body of our schools have sunk back into the old slough quite as deep as they were fifteen years ago. I may be wrong in this, but I believe it.

Do you ask me why, entertaining such views, I failed in my reports as State Superintendent, to press vigorously the immediate restoration of the county superintendency? I am ready to answer you. If I am not quite prepared to declare my be-

lief in the maxim "vox populi, vox dei!" still I believe that the people have a right to do this, or do that, according to their own good pleasure.

It is all nonsense, in my judgment, for any man, or set of men, in matters where no deep principle is involved, to keep up a struggle against the settled tide of public opinion. It is worse than useless, because it only perpetuates the evil, if evil there be. There was an acrimonious contest in this State, and the county superintendency was put down. Keep up a constant fusillade on the subject, and the old fires of prejudice will be kept burning. Drop the subject, and let the people look coolly at the matter a few years, — investigate, without being thrown into the position of combatants, — and then the "sober second thought" will be heard. If that second thought says *restore*, then restore it will be; if it says the contrary, we cannot help ourselves, and must submit. In my last annual report, at the close of 1853, I submitted my individual views in favor of the restoration of the county superintendency, but still advised the legislature to wait a little longer, as nowhere is excited popular controversy so fatal as in our schools. I have little doubt the office will be restored within two or three years. If I were in a State where the question was an open one, I should most assuredly press the establishment of the office. State, assembly district, and town superintendents, with proper powers and duties, constitute infinitely the best system, and if the results are to be taken into view, the cheapest one. There is no economy in saving a dollar to each head of a family per annum by a system of schools in which it will take ten years for his children to procure the amount of education which they ought to obtain in five. If I could have my choice, and was obliged to give up either, the county or town superintendency, I would give up the latter. To do all the school business of a county, (I should rather say assembly district, for a county gives no idea of size or number of population,) would make one man too much of a drudge, but out of a whole assembly district, you could always, if the appointing power were exercised discreetly, get a well qualified man, and then something would be done to good purpose. Under the other system you cannot be at all sure that what is done in many towns will be done to good purpose. And a county officer would cost less than one for each town.

I have given you my views at extraordinary length for me, crowded as I am at present with other objects. But one cannot but feel a deep interest when he thinks of the importance of your great new western commonwealth starting right in

their educational career, and he does not feel at liberty to decline to throw his mite of opinion into the scale where it is asked for. I have written with running pen, and you must take my wheat, if I bring any, with a good deal of chaff.

Very respectfully, yours,

HENRY S. RANDALL.

THE GYROSCOPE.

WE insert in another part of our number a wood-cut and advertisement of this pretty piece of apparatus, which many of our readers had an opportunity of seeing, while attending the recent meeting at Springfield. By the following extract from the report of their doings, which we take from the New York Tribune, it will be seen that it was one of the subjects of discussion among the learned men assembled at Albany.

In the Section of Physics and Mathematics, of the American Association for the Advancement of Science, — "a paper was read by Professor W. B. ROGERS, on the history and theory of the toys called Gyroscopes. These instruments have lately attracted a good deal of attention; and the form of them is probably familiar to our readers. They consist essentially of a wheel which may be made to rotate very rapidly at the end of an axis, which is balanced on a swivel joint at the top of a vertical post. If, while the wheel is rotating, the axis is thrown out of balance, by means of a sliding weight, the axis begins to rotate in a horizontal direction round the post. This is the simplest form, but others more complicated are to be found. They were first made by Professor W. R. Johnson, of Philadelphia, and have recently been revived in France. The French mathematicians acknowledge Professor Johnson as the inventor. He published an article in *Silliman's Journal* about twenty-five years ago, describing his apparatus. Professor Rogers then explained the cause of the secondary rotation by the method of the combination of rotations, and by the doctrine of couples of forces. He wished to divest the theory, if possible, of the forms of the calculus, and present it in the beautiful geometrical manner in which the theory of the parallelogram of rotations enables it to be stated. But even in this form, the question required far too much technicality to allow us to report Professor Rogers' reasoning. In all strictly scientific papers there must be a large proportion of matter which can be clothed only in the peculiar language of the science; and it is especially so in matters of mechanics and mathematics.

"Upon the conclusion of this paper a debate sprang up, which consumed a very disproportionate part of the time of the meeting. Prof. BARTLETT gave an explanation of the toy, starting from a different foundation; and some of the members supposing, — as Prof. Rogers himself appeared to do, — that Prof. Bartlett doubted the theory advanced in the paper, many needless words were uttered upon the subject. At length Prof. Rogers acknowledged the truth of several of the views which he had at first supposed were contradictory to his own, and Prof. PEIRCE, who had not yet spoken, closed the discussion by a simple statement of the real points of the case. He observed that Prof. Lovering had recently presented a complete discussion of the question to the American Academy; that the whole theory of it was in fact contained in that of the common top; and as for the antiquity, the same theory was long ago presented by one Isaac Newton. [Laughter]. Prof. ROGERS said that he was aware of this similarity of the theory of the Gyroscope to that of the top, and of the precession of the equinoxes, and had prepared diagrams to illustrate these subjects, and also the experiments of Foucault on the pendulum, which he would have shown to the Association as illustrations of his paper, had he thought that there would be time. Prof. HENRY remarked that the same problem was found in gunnery, when a rotary motion, — as in the rifle, — is given to the ball. As long as the ball flies nearly horizontal, it will remain nearly in one vertical plane, but when it begins rapidly to deflect from a level it will also have a sensible horizontal deflection."

The article above referred to may be found in the twenty-first volume of Silliman's Journal, in the number for Jan., 1832, and is entitled, "Description of an Apparatus called the Rotascope, for exhibiting several phenomena, and illustrating certain laws of rotary motion; by Walter R. Johnson, Professor of Mechanics and Natural Philosophy in the Franklin Institute, Philadelphia." It is accompanied by a plate of Prof. Johnson's instrument, which is far more complicated than the present one; the wheel being enclosed within *three* brass circles, placed at right angles with one another, and the whole being set in a rectangular wooden frame which has a rotary motion of its own. The nucleus, however, of the whole, the fly-wheel and brass ring, and the principle of its action are precisely the same.

We could not render Prof. Johnson's description of his instrument, and of the experiments to be performed with it intelligible, without the plate. We give, however, some extracts, which will be interesting to those of our readers who have seen the Gyroscope.

The laws relating to rotary motion have been frequently made the subjects of profound analysis, and the transactions of some learned societies of Europe contain numerous papers expressly designed to elucidate this branch of mechanical science.

Nearly all the discussions of the subject, however, which have hitherto appeared, have been of the abstract and transcendental character. Hence they have in few instances either interested or instructed the cultivators of practical science; and those who have long been familiar with mechanical forces and motions are frequently quite unacquainted, except by casual occurrences, with any of the curious laws which concern the positions and changes of position in the axis of rotation, in revolving bodies. Our common books of mechanics generally contain concise accounts of the doctrines of rotary motion, limited, for the most part, however, to the consideration of central forces, the centre of percussion and of gyration, and the centre of spontaneous rotation, to which may be added that of oscillatory motion.

The forces tending to change the position of the axes of rotation are generally either wholly omitted, or, if concisely stated in an abstract form, are apparently regarded as incapable of experimental illustration. The whirling table of Mr. Ferguson is an ingenious apparatus for exhibiting the amount and directions of the several forces exerted by a body in its own fixed plane of revolution. But that instrument makes no provision for the phenomena above referred to.

When we consider that the extensive diffusion of a branch of knowledge often depends on the facility with which its elements can be made apparent to the understanding, we are at no loss in estimating the practical value of philosophical instruments, whether intended for demonstration, or for research. Of this truth the machine of Atwood may be taken as an illustration. This machine gives a most elegant and satisfactory exhibition of the principles of uniform, accelerated and retarded motions, as dependent on the force of gravity. All the motions in the machine may be so slow as to reduce the resistance of the air to an unimportant element, and the friction and inertia of the parts being separately determined and allowed for, the theoretical laws of motion are seen to be perfectly confirmed by the experiments.

As to the manner in which the principles of rotation have generally been explained, it may be briefly stated on the plan of what are called rectangular coördinates. As by referring the effect of any force applied opposite to the centre of gravity of a body at rest, to three lines mutually crossing each other at right angles, the resulting direction which the centre of gravity of that body will take in free space, is inferred; so, by a consideration of three perpendicular axes of revolution within the body itself, we may determine the effect of any number of forces tending to produce rotation. Combining these two together, we have the resultant motions, both of rotation and translation. One of the most important propositions pertaining to the physical character of the subject, is that discovered and demonstrated by Frisi; — that "when a body revolves on an axis, and a

force is impressed, tending to make it revolve on another, it will revolve on neither, but on a line in the same plane with them, dividing the angle which they contain so that the sines of the parts are in the inverse ratio of the angular velocities with which the body would have revolved about the said axes separately."

The following elementary experiments and observations were the leading facts which suggested the construction of the instrument hereafter described.

1. When we take up by its *brazen meridian* a common artificial globe, and, having given it a rapid motion about its axis, attempt to move the poles from their position in space, we shall find our efforts resisted and the globe impelled in various directions, in a manner which will generally surprise those to whom the experiment is new. If the globe be held by the meridian at points over the equatorial circle of the sphere, and the axis be placed nearly vertical, and if in this state of things the revolving globe be carried alternately from right to left, and the reverse by the extended arms, around in a small orbit or portion of an orbit, the tendency of the sphere to change the position of its axis will be felt in one or both directions of the movement.

2. Whenever we suspend, in the manner of a pendulum, by a rod a few feet in length, an artificial globe, by its brazen meridian, at a point at or near its equator, the globe, if not caused to revolve on its axis, may be made to oscillate in any direction, without tending to vary the relative position of its poles; but if the globe receive a rapid rotary motion, previously to the commencement of its oscillations, there will be a vigorous effort visible at every oscillation, tending to alter the direction of the axis of the globe.

A little observation will serve to ascertain, that the position which the axis affects, is such as to bring the rotary motion referred to the centre of the sphere into the same plane and the same direction as that of the oscillation, referring the latter to the centre or point of suspension of the pendulum. Hence, if we watch the motion of the exterior of the globe, we shall perceive that the *rising side* in the *rotation*, is the *anterior* side in the *oscillation*, and that the inverting takes place the instant the pendulum begins to descend in the arc of oscillation. * * * * * *

5. A carriage is often overset in turning a corner, or describing a curve of short radius. Here the effect is produced sometimes with astonishing suddenness; at other times the inner wheel, or that which according to the direction of the turn is describing the smaller circle, rises from the ground and revolves for a second or two on its axle without touching the surface; and, if the motion be not too rapid, may possibly return and allow the vehicle to recover its position, and pursue its course. But if the wheel which is revolving in air, have any considerable velocity, the body of the carriage will appear to be overset by a force greatly superior to that which is due to the mere centrifugal motion of the carriage from its curve.

6. A disk of metal or other heavy substance, when projected into the air by the hand, receiving at the same time a rapid rotary motion, will sometimes be observed to perform singular evolutions in certain parts of its track.

7. The accurate experiments of Mr. Hutton and others, on gunnery, have proved that a very great deflection of a cannon shot, from the direction of the piece, often takes place, amounting in some instances to an angle of 15°.

8. The use of a fly-wheel to regulate the motion of machinery in a steamboat, was formerly very common, and some of our boats still retain it. In describing a curve with the boat, as in rounding to, near a wharf, or in tacking rather shortly, a close inspection of the wheel will show that a powerful effort is made by it to depress one, and elevate the other of its gudgeons; and that a correspondent effect in racking the boat, or causing it to careen, is produced.

9. A small apparatus, said to have been devised by the celebrated La Place, to illustrate the precession of the equinoxes, has been made in France, and imitated by an ingenious mechanic of Philadelphia. It is formed of two concentric rings revolving on axes at right angles to each other. Within the inner ring is a small sphere, loaded at one of its poles in such a manner as to produce a rotation in the axis of the inner ring, when the sphere is caused to revolve with rapidity. The chief parts of the rotascope had been devised and constructed before I had an opportunity of seeing the above described apparatus.

* * * * * * *

11. Numerous facts in Geology strongly indicate that at some remote periods of duration, the position of the earth's axis, with regard to the plane of its orbit, was different from what it is at present, and that successive periods of change have at length brought it to its present angle of inclination.

12. It has been observed by Biot and other astronomers as "one of the most remarkable phenomena of our system," that the motions of rotation of all the planets are directed from west to east, like their progressive motions; and this agreement they have generally attributed to the first cause which determined the planetary motions.

From the foregoing facts and observations, the importance of some apparatus to illustrate, and, if practicable, to measure the tendency of bodies in rotation to preserve or to alter their planes of motion, and also to exhibit the various effects of combining a progressive curvilinear motion with rotation about a certain axis, will be obvious.

A detailed description of the instrument follows, with an account of thirteen different experiments to be performed with it, for which we must refer the curious reader to the article itself. The simplest of the experiments are the same as those performed with the Gyroscope.

Though the instrument is not a new one, and there appears to be no principle involved in it not already familiar to men of science, yet it would make a very interesting addition to the apparatus of the High School-room, and we recommend it to the attention of our readers.* W. P. A.

* It is for sale in Boston by Messrs. Ide & Dutton.

COMMON-PLACE BOOKS.

We hope our readers keep a common-place book. If they do not, they fail to use a valuable means of usefulness and self-improvement. "Adventure not all thy learning," says quaint old Fuller, (we quote from *our* common-place book,) "in one bottom, but divide it betwixt thy memory and thy note-books. He that, with Bias, carries all his learning about him in his head, will utterly be beggared and bankrupt, if a violent disease — a merciless thief — should rob and strip him. I know some have a common-place against common-place books, and yet perchance will privately make use of what they publicly declaim against. A common-place book contains many notions in garrison, whence the owner may draw out an army into the field on competent warning." And we have the high authority of Bacon in their favor. In his Advancement of Learning he says, "I am not ignorant of the prejudice imputed to the use of common-place books, as causing a retardation of reading, and some sloth or relaxation of memory. But because it is but a counterfeit thing in knowledge to be forward and pregnant, except a man be deep and full, I hold the entering of common-places to be a matter of great use and essence in studying, as that which assureth copie of invention and contracteth judgment to a strength."*

The common-place book most used among us, is, we suppose, the Index Rerum of the Rev. John Todd. This is merely a modification of the plan of the famous philosopher John Locke, and is rather, as its name imports, an index than a proper book. It consists of a manuscript volume, the pages

* While we write our eye has fallen upon a passage in the prose works of the German scholar and poet Herder, which is very much to our present purpose. In an address to the pupils of a Gymnasium, he says: — "The ancients loved *collectanea*, either complete series of extracts from books, or selections of single thoughts and passages. They may be arranged in many ways, and for various objects, but in youth the habit can hardly be entirely neglected without harm. How interesting it is to copy from a good book the things and thoughts that have especially pleased us, though they may be but a few, to arrange them in systematic order, that we may know where to find them for use, and thus to have in them the history of the development of our own thoughts! A good book becomes thus all the dearer to us, and though we may lose our extracts, or never look at them again, still the advantage of having made them is not lost, for we thereby made the thoughts our own, and, as it were, turned them into our own flesh and blood. I know that, in our times, even in the sciences, Quaker doctrine prevails; the spirit must inspire us; even in reading, we must snatch at that, and trouble ourselves but little about the words or their arrangement. I fear we go too far in this. The genius of an author cannot be corked up in our brains like spirit in a bottle. It is the letter that preserves it; extracts, writing, close or free imitation make him our own."

of which have a ruled margin, and are headed with the different letters of the alphabet, each letter having as many leaves devoted to it as there are vowels, and each leaf having a letter followed by a vowel. The plan is to insert the references to the various subjects under the initial letter and first vowel of the word. Thus, if one wished to preserve references to passages relating to knowledge, they would be entered on the page Ko., or to the Indians upon the page Ii. The objection to this method is obvious, and is well stated by a writer, whose plan we shall presently bring to the notice of our readers. He says:

"It is strange, indeed, that such a man as Locke, impressed with the value of method, should ever have adopted so imperfect and arbitrary a plan, or, having once adopted it, that he should not have improved upon it; for, surely, nothing can be more opposed to all method than the grouping of subjects together without any other bond of connection than an initial letter and a first vowel. * * * The objection to Locke's 'Common-place Book' is this, — that a number of totally different subjects are entered in the same page, or succession of pages, which subjects are held together by no other relation than that of an initial letter and first vowel. It is true, that so long as these entries are few in number, there is little loss of time in referring to them; but if they become very numerous, many pages may be passed in review before the desired passage meets the eye. But even this inconvenience is not of sufficient moment to require the adoption of an improved method, where each of the several entries refers to a different subject. It is only when a great number of passages referring to the same topic are scattered through a succession of pages, that the inconvenience of this plan is severely felt. It was this obvious inconvenience which induced me to adopt the improvement of devoting a separate page, or series of pages, to each separate subject. But even here I soon found the same objection to apply which lay against the common-place book of Locke. As long as the entries referring to any particular topic were few in number, my common-place book answered well enough; but when the subject began to occupy many pages, I found that if I wanted to make use of it, to digest the materials which I had collected, to analyze them, or to write about them, I had to rearrange the whole, and to place extracts or facts of my own observing which related to one part of my subject, or threw light upon any isolated question connected with it, by themselves, that by viewing them in connection I might better understand their bearing and estimate their value. Thus, the original labor of inscribing the several extracts or facts in my common-place book had to be repeated, with regard to all those parts of my subject to which I was induced to pay particular attention. To place the inconvenience of this method in a strong light, I may instance one subject which occupies upwards of sixteen closely written pages in a large quarto volume, contains upwards of 250 quotations, abstracts, facts, or references, and embraces almost every topic of interest connected with it. With all the assistance derived from

the marginal references, much time must necessarily be lost in selecting the quotations or facts, referring to any one symptom observed, or remedy employed, or bearing upon any disputed point; and it is obvious that the information collected could only be made available by being re-arranged, whether for my own information or the instruction of others."

We have found another objection, and that is, that, as every reader has, or ought to have, a limited range of subjects to which he devotes his attention, the difficulty occurs that a few pages of his Index become crowded to overflowing, while a great part of his book remains a desert waste of blank paper. The writer whom we have just quoted, Mr. Guy, proposes, in a lecture read in connection with the London Educational Exhibition, in 1853, a simple and ingenious plan which obviates these difficulties, and furnishes in itself a very good mental discipline to a student. He proposes, instead of a bound book, a number of loose leaves, divided into unequal parts by a perpendicular column. He would place at the head of a leaf, as a running title, the general subject, immediately under it a subdivision of the subject, in the smaller left-hand space still further subdivisions, and opposite, in the larger right-hand space, either the references or quotations belonging to that subdivision. A narrow margin should be ruled off at the extreme left for binding.

He gives the following as an example of their use; we can only give a description, as we cannot imitate his pages with our types. Suppose the subject to be the influence of the mind on the body; this would form the running title of the leaf. Suppose the reader should find a passage describing the method taken by a Kamtschadale to recover some stolen property, by working upon the superstitious fears of his companions in reference to the power of their Schamans or holy men, by distributing among them some sticks of equal length, and telling them that the Schaman would cause the thief's stick to grow longer; who, actually believing that he saw his stick begin to grow, broke it, and of course was detected by its shortness when they came to be compared together. This, which is an instance of the influence of the mind upon the body, is more particularly an instance of the influence of the imagination on the senses; this, therefore, should be the second title, and under it should be put the name of the particular sense concerned, that of Sight. In the left hand narrow column our author then puts the words, "Ingenious mode of detecting a thief," and in the right the reference to the book where the story is told, or the story itself transcribed. He then enu-

merates one or two similar stories bearing on the same subject. Having accumulated a number of these "loose leaves," the following is our author's mode of managing them, and his description of the advantages of the plan.

Having now sufficiently described the loose leaves of which my "Common-place Book" is made up, and the mode of making the entries upon them, I proceed to describe the successive steps of the process by which the loose leaves are made up into a book.

The first loose leaf, containing an entry referring to a particular subject, is placed in a portfolio, formed by folding half a sheet of thin cartridge paper, and writing upon the outside of it the name of the subject either in ink or pencil. All the loose leaves having entries referring to the same subject are to be placed in this same portfolio, and there kept till they became numerous. When the loose papers have become so numerous that time is lost in searching among them for any particular subdivision, they are to be distributed through several similar portfolios, on the outside of which the principal subject, and the subdivision to which the portfolio is devoted, are to be written. These thin portfolios, each containing its own subdivision of the subject, are then to be placed in a cover, bearing on the outside the name of the principal subject.

When the portfolios of stiffer cartridge paper, thus enclosed in their covers, have themselves become numerous, and their contents bulky, they may be made into a book, as follows:—

The loose leaves contained in each portfolio are to be arranged in order, and placed before one of twenty leaves of stout paper, bearing a letter of the alphabet, which I may call INDEX-LEAVES. This being done with all the index-leaves in succession, the several subdivisions are written upon a TABLE OF CONTENTS, consisting also of stout paper, and of such a size as to leave the letters of the index-leaves uncovered; which table of contents is inscribed with the twenty letters of the alphabet printed on the index-leaves. This table of contents bearing the several subdivisions of the subject written opposite to the several index-letters, we have only to note the letter of the alphabet opposite the entry on this table of contents, and to turn at once to the same letter on one of the index-leaves, in order to find all that we have accumulated in reference to the subdivision in question. The loose leaves are contained between that index-leaf and the preceding one. All the loose leaves having been thus arranged, each subdivision having its own index-leaf and its own entry in the table of contents, the collection of loose papers is made up into a book by means of the portfolio furnished with a spring. The name of the subject should be printed on the back of the portfolio, which may then be placed on the book-case.

Having thus described the method which I recommend for gradually building up a Common-place Book out of loose leaves, let me briefly state what I conceive to be the peculiar advantages of this method. They are four in number:—1. It is not possible to use it without thinking of the exact meaning of every entry which is made. 2. That

same proposition, with all its illustrations, is always kept distinct and separate from all others. 3. The book may easily be taken to pieces, and any part of it carried about for use. 4. An experiment of the plan may be made at a very trifling cost.

"Such are the principal features of a plan which I have myself adopted, after some experience of the defects of Locke's system of Common-place Book, even in its most inproved form, and which I venture to recommend with confidence as a means of economizing time, of encouraging habits of order so essential to clearness and precision of thought, and of heaping up materials always ready for use. I know indeed of no means by which reading is likely to be rendered so profitable as by the reflection which must be exerted on every fact as it is thus arranged in its proper place, and in due relation to others; and I know, from actual experience, the great superiority of a method which implies the constant exercise of reason and reflection over that which, consisting merely in transcribing the thoughts of others, is but too apt to convert the man of learning and science into a mere amanuensis.

'He who reads
Incessantly, and to his reading brings not
A spirit and judgment equal or superior,
Uncertain and unsettled still remains,
Deep versed in books, and shallow in himself.'

And these lines apply with equal force to him who writes incessantly without digesting and arranging that which he transcribes.

"The mental training implied in the employment of such a method as that which I have described, the necessity of ascertaining the precise meaning and scope of every passage committed to paper, and of expressing it in the fewest possible words, form the chief recommendation of the plan which I propose. Another advantage which it possesses over the ordinary forms of Common-place Book, is the close correspondence of the method itself with the mental process by which sciences are built up. First, a single fact is observed, then many others resembling it in some general feature; then, with accumulation of observations, confusion and an effort at subdivision; then the formation of smaller groups; and, lastly, the re-union of the several groups with others formed by a similar process, and the construction of separate sciences. * * * I will only add, that the method is equally applicable to science, learning, and literature. The scholar may collect passages in illustration of disputed points in philology; the historian may bring together the scattered materials of history; the author in the lighter walks of literature may cull the flowers of fancy, or the gems of wit; and the divine may heap up his treasures of sacred learning; and each will find such materials as he possesses readily available for the purposes to which he wishes to apply them."

The plan seems to us a good one and worth a trial. We have ourselves employed one much the same in principle, though not quite so systematic. We have for a long time been in the habit of keeping a common quarto MS. book, such as all stationers sell, always by us, and whenever we read a book we

mark upon a bit of paper, or on the fly leaf if it is our own, the passages we wish afterwards to refer to. When we have read the book through, we enter either the words or the substance of the passages in our book, putting the name of the volume and the page in the margin. We make an index to our volume, and we have, besides, special indices to subjects we are pursuing systematically, containing references, not only to our MS. collections, but to whatever we know to exist upon the subject.

Whatever method may be pursued, we have no doubt of the value of the habit. We cannot help thinking that the plan might be introduced among scholars. Suppose, for instance, that instead of those forlorn platitudes respecting the virtuousness of virtue, the beauteousness of beauty, the charitableness of charity, and the viciousness of vice, or those melancholy attempts at description where there is no conception of the thing to be described, or any other of those empty forms of words called "Compositions," which so many young gentlemen, and especially young ladies* are forced to write — suppose that instead of these, pupils were set to gathering and systematizing information upon given topics as a preparatory exercise. We know that Sydney Smith never liked to read a book he had to review — he said it prejudiced him so; but we have always found there was some trifling advantage, when we had to write upon any subject, in knowing something about it. Perhaps this might improve the quality of "compositions"—but we are open to correction. At any rate, if we had a good High School of boys and girls, and a good library in it, (and no school is a good one without that,) we should point out to them, first, the advantage of reading systematically; next, of thinking about what they read; and lastly, to quote Capt. Cuttle, "when found," of making note of what they read.

Before leaving the subject we must mention one other little matter, because we have ourselves derived great benefit from the hint.

"One other arrangement of Locke's," says Mr. Guy, "I ought not to omit to notice, as it is highly characteristic of the man, and of the accurate habits in which he exercised himself. He says: — 'To take notice of a place in an author from whom I quote something, I make use of this

* Mr. Guy even gives a hint for the improvement of young ladies' albums. "I can even imagine," he says, "a lady's album transformed into a common-place book, in which each lady shall for herself, according to her taste and fancy, arrange under proper heads the passages from our great poets and prose writers, admitting the best anonymous contributions on condition that they do not disgrace their company, and that their authors know enough of their meaning to place them under some distinct and defined heading." Alas for the contributors, compelled to know their own meaning!

method: Before I write anything, I put the name of the author in my common-place book, and under that name the title of the treatise, the size of the volume, the time and place of its edition, and (what ought never to be omitted) the number of pages that the whole book contains. * * * This number of pages serves me for the future to mark the particular treatise and the edition I made use of. I have no need to mark the place, otherwise than in setting down the number of the page from whence I have drawn what I have wrote, just above the number of pages contained in the whole volume.' So that, by a simple rule-of-three calculation, the number of the page could readily be found in another edition of the same author."

Readers will find a particular convenience in this, in referring, as there is often occasion to do, from English to American, or from American to English editions of the same book.

W. P. A.

THE SCOTTISH TRAINING SYSTEM.

[Resuming our extracts from the valuable work of Mr. Stow, quoted in our last number, we present his introductory answer to the question, *What is Education?*]

THERE is no subject that engages the attention of the public, more generally discussed, or less defined and understood, than EDUCATION. And yet, properly considered, there is no subject so vast or so important; involving, as it does, the temporal and eternal interests of man, as an inhabitant of earth and a candidate for heaven. All that can elevate him above the mere animal is involved in it. Instinct, in common with the lower animals, may do much to supply his bodily wants; but *true* education, or rather training, alone fits him for those intellectual and moral pursuits and enjoyments that distinguish him as a rational, physical, and moral being.

Education is a term representing what must be of vast importance; and yet we can scarcely converse with two persons who agree as to what is the meaning of the term. Almost all speeches, pamphlets, and letters on the subject, refer to the quantity and variety of subjects to be taught, and the kind of books to be read, whether Scriptural, elementary, scientific, historical, or to the size of school-houses, number of pupils, amount of fees, etc., and whether to be taught by monitors or masters; but *never treat upon the mode of communication*, which is, after all, *the most essential point;* or whether moral results can be produced by other than *direct* moral means. The question, indeed, has been the theme of our most accomplished orators, in the pulpit, on the platform, at the bar,

and in the Senate; and yet it must be acknowledged, that the whole of their expositions, separate and combined, have not proved so explicit and practical, and therefore satisfactory, as to receive universal approval. All appear to agree in prescribing EDUCATION as a cure for the evils of society; and yet we are left to guess at *what* Education is: it seems to mean anything and everything. The great and general mistake appears to arise from the fatal idea and practical error of substituting mere intellectual *instruction* for intellectual and *moral training*, and imagining that the "child" is under cultivation when the *head* alone is being exercised.

Some writers have recommended that Education should embrace the cultivation of the heart; but they have not provided for it, nor explained the means by which it might be *practically* accomplished; and when asked to state in what manner, and by what apparatus or method this should be effected, the almost uniform answer has been,—"Give the children of the poor moral and religious *instruction*, and they will become virtuous and good;" just as if moral *instruction* were one and the same thing with moral *training*, and the mere knowlege of what is right synonymous with the doing of it.

Education, technically considered, means simply that of the school. In reality, however, it comprehends that of the family, and the education, or rather training, which we all more or less experience in the intercourse of society, child with child, and man with his fellows. Above all, it embraces self-education, to which every man is most of all indebted for his *real* knowledge and attainments. In school he has generally received little more than the mere elements or power whereby he may educate himself, and, too generally, not even so much.

School is primarily, nay, almost exclusively, in the public mind, when Education is talked of, whilst in reality it is only secondary in influence. Why not make it primary, as it professes to be an instrument for intellectually, physically, and morally elevating the masses,—modelling it after that of the family, with all those advantages and that power which are attendant upon one of the most influential principles of our nature, viz., the sympathy of numbers?

The cultivation of mind and body in school has been too much disjoined; and whilst the physical powers have not had their due share of attention, the intellect and verbal memory have been almost exclusively, though but partially, cultivated. The moral affections and habits have not been properly exercised and directed. Intellectual instruction has been substituted for intellectual *training;* in fact, they have

practically been considered synonymous terms. Instruction is not training, although it forms a part of it. The child has been held to be under cultivation when his intellect or verbal memory was being exercised, as if he were neither a physical nor a moral being; forgetting, or not attending to the fact, that the *simultaneous* cultivation or exercise of all the powers of our compound nature alone trains "the child," and secures the highest attainment of each faculty; and that the sympathy of our nature is such, that the non-exercise or overstretching of one power or faculty, to a certain extent, weakens the others, — bodily health and vigor having an influence on the intellectual powers, and *vice versa;* whilst the exercise of the moral faculties and feelings gives a healthful and energetic tone to all.

WHAT IS EDUCATION? By some a child is said to be *educated* when he can read words of two or three syllables, — better, no doubt, when he can pronounce every word of a sentence, although he may not understand the meaning of one half of its terms, and repeat sounds from memory without attaching any idea to them. He is no more than *educated*, say others, when he can write, cast accounts, repeat the rules of English grammar, and answer a few questions in geography; and is simply *educated*, others still declare, when he has passed through the whole curriculum of the highest university. What Education is, has yet to be defined. In these days, *the most important of all the questions we can determine is*, WHAT IS POPULAR EDUCATION? WHAT OUGHT IT TO BE? The wealthy may choose for themselves, and are able to provide privately the best masters, or send their children to boarding schools, grammar schools, or universities. They may be satisfied at any step, from the "ab eb ib ob ub" of the old rote system of the English school, to that which embraces the most finished education. The idea, however, is now becoming more and more prevalent, whatever the practice may be, that, in the true sense of the term, our education is never complete on this side the grave; that education progresses, or ought to progress, through life; and that, although Methuselah himself had lived to complete 999 instead of 969 years, his education would only then have been finished.

Much has been said and written as to the deficiency of school education. Give us quantity, say many, and all will be well. Our nation will then rise to an unexampled height of intelligence and prosperity. Give us education — education; — increase the number of schools and schoolmasters, say they, and it will be the glory of our land! We say, give us quality first — quantity afterwards.

In many parts of our country and in our towns, there is undoubtedly a deficiency of schools, but the defects in quality are more to be deplored, notwithstanding all the noise and improvements that have been made during the last fifteen years. Education as it was, was little more than mere sounds. Education as it is, except in a very few cases, — and these are thinly scattered, — is little better now. We hear much about secular instruction and religious instruction; and the public imagine that the rising generation are now being well taught, and even *trained.* But examine the pupils who have left nine-tenths of our schools in town and country, and what do they actually know? What have they been taught, either of science or the arts, of history or of religion? Where is their moral training? To what correct physical habits have they been trained? Have they received proper notions of men and things? Can they follow or remember the substance of any discourse from the pulpit? Do they apprehend the plain meaning of a passage of Scripture, of science, or of morals, which they may have read? Can they apprehend or "take in" the substance of any reading, save that of those trashy publications which are alike dissipating to mind and injurious to morals? Have they been trained to the habit of considering what books they ought to read, — which they should choose and which reject? In fact, have their habits of mind and manners been at all moulded to any correct form? And yet a few months of such school-teaching will place them on the list of what are termed "THE EDUCATED!" Most certainly they are not *trained.*

What the education is that will best enable a man to educate himself, ought surely to be the paramount inquiry. Is it *Instruction,* or is it *Training,* or is it both? Is it the amount of elementary knowledge communicated,—or is it that exercise of mind by which the pupil acquires the power of educating himself? Till within the last few years, the term used to define Education was INSTRUCTION. Give elementary and religious *instruction,* it was and is still said, and this will be sufficient. Teach the poor to read the Bible, and forthwith you will make them good, holy, and happy citizens, — kind parents, — obedient children, — compassionate and honorable in their dealings; and crime will diminish. Hundreds of thousands of our population have received such an education. Are such the results? Have we hit upon the right kind of education, *or upon the proper mode of communication?* Can teaching or instruction alone produce the results which are so fondly anticipated? Can all the *telling,* or teaching, or in-

struction in the world enable a man to make a shoe, construct a machine, ride, write, or paint, without *training*, — that is, without *doing?* Can the mere *head-knowledge* of religious truth make a good man, without the practice of it, — without the training of the affections and moral habits?* Will teaching to read, write, and cast accounts, cultivate the child, — the whole man? Is this process of mere head-knowledge likely to uproot selfishness, pride, and vanity, and to substitute in their stead kindness, generosity, humility, forbearance, and courteousness, without the practice being enforced in suitable circumstances, as well as the theory communicated? The boy may repeat most correctly, and even understand in a general way the precepts, "Avenge not yourselves, but rather give place unto wrath;" "Render not evil for evil;" "Be courteous;" but see him at play among his companions, neither better, nor, perhaps, worse than himself, unsuperintended, and his conduct unreviewed by parent or schoolmaster, and what do these Scriptural injunctions avail him, when engaged in a quarrel? Reason is dormant, passion reigns for the time; and the repeated exercise of such propensities strengthens the disposition, and eventually forms evil *habits.*

In Education, as hitherto conducted in school, we may have had, in many cases, sound instruction, but not physical, intellectual, and moral training. Schools are not so constructed as to enable the child to be superintended in real life, which is at play; the master has not the opportunity of training, except under the unnatural restraint of a covered school-room;† and it is imagined, or, at least, stated, that children are morally trained without their being placed in circumstances where their moral dispositions and habits may be developed and cultivated; as if it were possible to train a bird to fly in a cage, or a race-horse to run in a stable.

Man is not all head, all feeling, nor all animal energy. He is a compound being, and must be trained as such; and the varied powers of mind and body, although distinct, so act and re-act upon each other, that it is difficult to say where the influence of the one begins and that of the other ends. The intellectual, to a certain extent, influences the physical, and

* Of course we do not, for a moment, suppose that all the learning in the world can change the heart; but training, as well as teaching, is a means in the use of which we hope to receive God's blessing.

† The phrase "covered school-room" is used by the author in contrast with the word *playground*, or, in his peculiar phraseology, with the phrase "*un*covered school-room;" exercise in the open air, under the eye of the teacher, being an indispensable part of the moral influence of the Scottish "training" system.—Ed.

vice versa; whilst the moral influences both, and is influenced by both in return. The most influential and successful mode of cultivating the child is, therefore, the daily and *simultaneous* exercise of his intellectual, physical, and moral powers. No injury can arise to his varied powers of mind and of body, provided they be fed and not stuffed, trained and not merely instructed.

How, or in what way, do we propose to elevate morally, physically, and intellectually, the masses of our population, amongst whom there is not, on the part of parents, either the opportunity, or, in most cases, the intelligence to accomplish this object? If done at all, it must be almost exclusively performed by the school-trainer. *It is not now done by the schoolmaster, and it cannot be accomplished by the parent.* Therefore our youth are growing up untrained in a moral, in a physical, and even in an intellectual point of view, although it is announced that "the schoolmaster is abroad." In reality, we have had much said and little done. The truth is forced upon our attention, that TEACHING IS NOT TRAINING!

What a school for moral, physical, and intellectual training ought to be, is not yet generally known, or, at least, is not apprehended. The schoolmaster himself is untrained, or if trained, he is not provided with the platform on which he can practise the art, and thus mould and train his tender and important charge. It is not enough that he "teach the young idea how to shoot;" he must also weed, prune, and water. And how can he labor without proper instruments, — how accomplish his end, if practically ignorant of the art? If he must train the "child," he must do more than merely exercise the memory or the understanding. He must, as we have already said, cultivate by exercise *the whole man*, in his thoughts, affections, and outward conduct; and this cannot possibly be accomplished within the walls of an ordinary school-room. What suitable school premises for popular education ought to be, remains, therefore, quite as undefined as the term Education itself. The two ideas are, in fact, inseparable. School accommodation, to teach or instruct the head, may be just what it has hitherto been, viz., the one school-room, not unfrequently dingy, dirty, and airless.* What a school for "training" the "child" according to the rule of Scripture and of nature, *must be*, is quite another thing. The physical, intellectual, and moral propensities and habits, must have *free* exercise under a proper superintendence, and the opportunity of development in *real* life, which, to a child, is freely at play. We do not

* Too many of our own rural school-houses, even in New England, yet answer too nearly to the above description. — ED.

speak of jealous watchfulness, or of a system of hateful and hated espionage, but of one where the natural dispositions of children have free scope, and their youthful and joyous feelings find full vent. To effect this, however, there must be the training-school premises, and there must be the trained master.

My object in working out the Training System, and transmitting it to the public through the Model and Normal Schools in Glasgow, was to accomplish these desirable points in Education. The system introduces two new and fundamental elements, namely, Moral Training and Picturing out in words. The latter, as an intellectual process, is necessary to the former; and both principles run through the whole process of the lessons, secular and religious. The "picturing out," embracing various points in the method, as we shall hereafter elucidate, enables the pupils to draw the lesson or deduction in their own language,* the master acting throughout the whole process as the trainer or conductor, and only furnishing facts which he ascertains that the children do not know, and, therefore, for the sake of advancement, must be told. The pupils, therefore, give the deduction or lesson.

Moral Training cannot be accomplished without providing additional accommodation, and re-organizing the whole method usually pursued. Moral Training, although a distinct principle, was introduced in conjunction with the ordinary branches of the public school, whilst for the natural development of dispositions and character, for moral superintendence by the master, and the intellectual culture of the pupils, a playground and a gallery were introduced. The week-day trainer, by the method of oral gallery training lessons, is enabled to communicate to seventy or eighty pupils a greater amount of secular knowledge in a given time, than he could on any other principle. During the first hour of the day, also, as much Bible knowledge is communicated on each of the six days of the week, as is done in the best Sabbath or Sunday schools, leaving the remainder of the day for other branches, and for moral training; and this, too, for the youth of all ages, whether they can or cannot read.†

* What we mean by the lesson is, the inference which every complete sentence or paragraph is intended to convey.

† This system, therefore, would be highly valuable to Scripture readers, Masters of Ragged Schools, etc., etc., and to Sunday School Teachers in particular, by enabling ignorant children to receive instruction, from the day they enter school, equally with those who can read.

[Many of the principles advanced in the preceding paragraphs have long been recognized by American educators. But their reception by the general mind is yet but in progress. The educational creed and practice of many of our teachers and school committees, as well as of parents, are yet very far behind the position taken by the author of the "training system."]—W. R.

TEACHERS' INSTITUTES IN NEW HAMPSHIRE.

[From the able report of Mr. Jonathan Tenney, Commissioner of Schools for Hillsboro' County, N. H., we extract the following paragraphs, which present an interesting view of the progress of Teachers' Institutes in public favor and professional usefulness in a large portion of New Hampshire. The Commissioner's statements incidentally introduce many topics of interest to the friends of education in other States as well as in that to which they more immediately refer.]

CERTAIN it is, with all their faults, Institutes have done more than any other agency ever did, to elevate our school teachers, and divest our schools of many of the narrow notions and habits, that, ten or fifteen years ago, were common in them. Nor is the day of their usefulness past: they are improving. Men of practical judgment, men of large and successful experience, men acquainted with the history of education and the most approved modes of reaching mind and developing its faculties, men who have been born and nurtured, or have long labored in our midst, are beginning to be sought for to instruct in them.

The best teachers prize the Institute the most: the best Institutes are made up of such teachers. If we had *all* best teachers, the question of their utility would never be raised. If all of our teachers were *normally* educated, they would demand such associations, — perhaps, not need them, — more than now. If all our school committees and parents carefully attended them, watching intelligently their exercises and their effects upon teachers, there would be no whisper of crippling or discontinuing them.

The attendance upon our Institutes is somewhat diminished by the academic and other school terms. The academy terms are not closed; and students leave their classes reluctantly: and this is well. The public schools are commencing; they cannot be delayed beyond the usual time; they cannot be suspended: this last is not well. Our public school system should harmonize. Reference should be had, by commissioners and school committees, to each other's plans in the commencement of school and Institute sessions. If the former are already commenced, why may not committees do as was done in Manchester and elsewhere, — as is often done in Massachusetts, — suspend schools, and let the teachers' pay go on, that they may attend these gatherings? Here they will both get and do good. What is lost in time may be gained in power, if these teachers return with a grateful spirit, a newborn zeal, an unwonted emulation, and many valuable hints for improvement.

I have seen Institutes in eight of the ten counties of this State; and I have watched them closely. They are not perfect; they vary, too, in different sessions, — as all schools and associations do, — as vary the characters of the members, instructors, lecturers, and commissioners. Let us be slow to cripple them, by withholding means or restricting their number. We cannot spare them yet. Institutes cannot give book learning, common sense, nor aptness to teach, any more than the best of school teachers can supply to mind the deficiencies of nature. But whatever of good qualities for teaching exist in any one, may be vastly quickened and developed by proper attendance upon any Institute of tolerable regulation and instruction.

[Soliciting attention to his official visits to schools, Mr. Tenney makes the following eloquent appeal.]

I appeal to all classes of men and women to come and help me in the work of promoting every good interest through the elevation of our schools, thus securing the noble means used by the State for the right education of its youth. I want the aid of the good physician, that the children may be preserved from the sad effects of bad school-houses and bad modes of study, of discipline, and of general conduct; of the wise statesman, that we have sound legislation and discreet execution of laws; of the exemplary clergyman, that the children of his charge may early be grounded in the precepts of Christianity and the practice of Christian virtues; of the skilful teacher, that the young may be rightly taught the elements of science, and directed how to acquire and use valuable knowledge; of the intelligent artisan, that the hand of skill may be made useful to every department of human industry; of the successful farmer, that our sons may know how to make the most of our hard soil.

[Mr. Tenney's concluding remarks on general topics present many useful suggestions for the advancement of common school education, everywhere. Not a few of his observations are still applicable to some portions of our own favored State. Those of our readers who have an actual knowledge of the condition of our schools in rural districts, will recognize the justice of some of the strictures which follow.]

1. *District System.* This is one of the inherited evils pertaining to our school system. It has been carried to an extreme probably never dreamed of by its originators. Most of our towns have, at least, twice as many districts as are needed. My opinion is, that all district lines should be abolished, and that all the school property should be owned and managed by the town, under the direction of a suitable committee; that school-houses should be located and built suf-

ficient to accommodate the children of the town, at the rate of from thirty to fifty to each school-room; and that attendance should be directed by the school committee. In this way we could have longer schools under better teachers. No serious objection, except distance of travel, can be urged against this scheme; and this, when the advantages are compared, becomes very small.

2. *Small Schools.* These come from the district system. There are nearly ninety districts in the county having an attendance of less than 20 pupils; many of less than 10; most of less than 30; only about sixty of 40 and more. In one district of three pupils, about $80 were spent for schools in one winter. As our school money is frequently divided, the scholars in the smaller districts may get from $10 to $25 each, annually, while in the larger districts, less than $1 is the average amount of school money to each pupil. This is unequal, — entirely contrary to the spirit of our laws.

3. *Length of Schools.* Very rarely have our rural districts more than 20 weeks of school each year; many of them not more than 12; some not more than 6 or 8. Now, these may be better than nothing, if kept several seasons by the same good teacher. As now managed, many of them are of but little value to the intellectual and moral natures of the young, especially as they are usually kept by *cheap* teachers in very *cheap* school-houses. In the end, however, a bad education may cost parents and society more than they now count upon. Our children all have a right to equal advantages from their common parent, — the State; and the State ought to see them secured. Our public schools all ought to be in session from 30 to 40 weeks annually; and might be with little increase of cost.

4. *Change of Teachers.* The young mind needs to be cared for and educated by those who understand its powers, its motives, its tendencies, its peculiarities. How can these be known by the teacher who comes to take direction of the child, a stranger; leaves at the end of a few weeks, just as he begins to understand his trust and his duties, and leaves, never to return again, for another to follow him in the same blind and erring course?

5 *Male and Female Teachers.* That the female character is, by nature, better adapted to guiding and unfolding the mind of the young child, is not to be questioned. Hence females are so well fitted to take the place of the mother in charge of the primary discipline and instruction in our schools. They are now, more than formerly, intrusted with the man-

agement of youth of more maturity in our winter schools; and this, in most cases, with equal success. Economy first led to the trial; and now 6 to 1 of the teachers of our schools are females, a majority of our winter sessions being committed to them, and, as aforetime, nearly all the summer. The big boy, of rude manners, is tamed by the magic skill of the mistress, more than by the stern command and uplifted rod of the master. The schoolmaster has learned a lesson from his "better half," in government as well as in teaching. This is well; and, as the experiment succeeds so well, it should now pass into a habit, to employ females of proper age and power, in most of our winter schools, not only because they can be obtained for less wages, but because they are more likely to be successful.

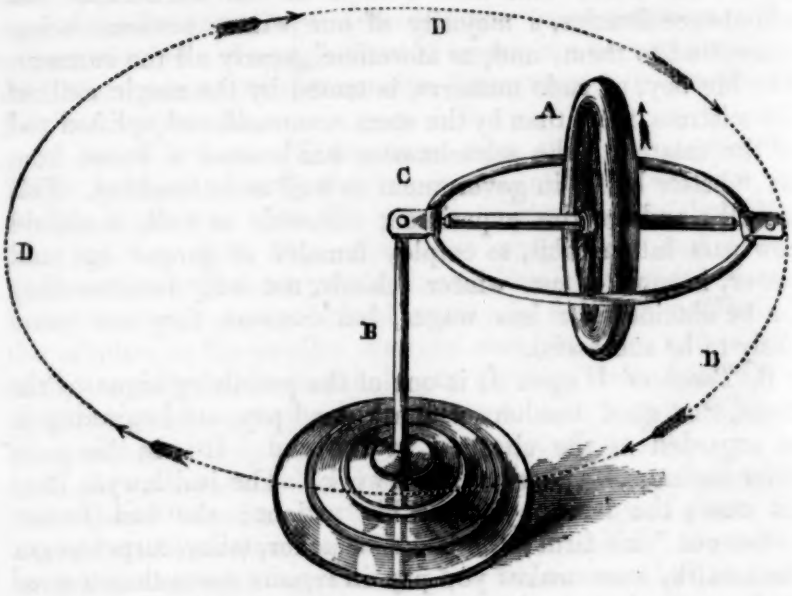
6. *Teachers' Wages.* It is one of the promising signs of the times, that good teachers who ask good pay, are beginning to be regarded as the cheapest in the end. It is in this as in other business, — poor pay, poor work. The bad lawyer loses his case; the bad physician, his patient; the bad farmer "runs out" his farm; the bad shoemaker, tailor, carpenter, or blacksmith, soon makes you pay in *repairs* more than a good workman had charged you at first, to say nothing of vexation of mind and loss of time.

7. *Parental Visits.* We find more of these than formerly. Yet they are "few and far between" in most towns. Here is a great fault — I think the greatest *radical* fault — the cause of bad houses, bad teachers, and bad scholars, — that parents and citizens do not exhibit that all-pervading, deep, and abiding interest in the practical working of their schools, that they do in those things of minor importance — their farms, their merchandise, and their other common affairs. Next to one's house, the school should be familiar to every good man and woman. It should often be entered, quietly, yet without formality, and its mysterious and soul-stirring operations watched with the liveliest interest, as they would be, if their significance and results were duly estimated. There are few sins of omission in our community so much to be repented of as this neglect of visiting schools.

O'er wayward childhood wouldst thou hold firm rule,
And sun thee in the light of happy faces;
Love, Hope, and Patience, these must be thy graces,
And in thine own heart let them first keep school.

COLERIDGE.

LANE'S
MECHANICAL PARADOX.



The simple apparatus represented in this figure consists of the wheel A, which has a heavy rim, and is suspended in a brass ring, upon steel points, which enter the ends of the axis. The two ears attached to this ring, at the ends of the axis, are indented, to receive the point of the standard, B.

If a rapid rotation is given the wheel A, by winding a cord on the brass spool placed on the axis, and pulling it vigorously, as a boy would spin a top, (the ring being firmly held,) the wheel seems to become endowed with a new power, which, apparently, puts at defiance the laws of gravity. When one of the ears is placed on the point of the standard, B, and the other ear allowed to rest on the finger, supporting the axis in a horizontal position, nothing singular is observed. If the finger is slowly lowered, the end of the axis will fall with it; but, if the finger be drawn away *horizontally*, leaving the end unsupported, the instrument, with marvelous independence, will proceed to take care of itself, and will not only maintain its horizontal position, but, at once, commence revolving around the standard on which it rests. The entire machine, which weighs over a pound, remains suspended *almost* on nothing, and a half pound weight may be hung on the *unsupported end* without changing its inclination.

If the outer end is elevated or depressed by the hand, the axis *retains the inclination* last given it, except that, if above a horizontal plane, it will gradually *rise* while the force of the rotation continues sufficient, or, if below, it will slowly fall.

The same phenomena will occur if the Paradox is suspended by a cord fastened to the universal joint on one of the ears. This mode of use is safest, as the delicate mechanism will be materially injured by falling; there is less friction, however, when the ear rests on the iron point.

It will be observed that, when the wheel rotates in one direction, the machine revolves in the *opposite* direction, as indicated by arrows in the figure. If the horizontal revolution is stopped, the Paradox instantly falls.

If the ring is held in the hands by the ears, and one end *suddenly* raised or lowered, an unexpected resistance is encountered, and a strong tendency to revolve is manifested; or, if held firmly by one ear, and the hand containing it allowed to fall from a horizontal position, the same tendency to revolve will be felt. If suspended by a cord, fastened to the joint on one ear, and swung like a pendulum, it will be found to describe an ellipse; in fact, it will be impossible to swing it in a straight line.

A socket, with branching arms, forming a semi-circle, accompanies each instrument, (though not shown in the cut.) If this socket is placed on the standard, and the Paradox suspended between the arms, by pivots placed in the ring at right angles to the axis, other singular phenomena may be observed.

1. When the Paradox is accurately balanced on the pivots, and the wheel set in rapid motion, the axis will continue to point in one direction, even though the *standard* be turned entirely round. A more striking illustration of this is seen by placing the socket on a wire at the end of a lever. If the lever be made to describe a horizontal circle, the axis of the wheel will be found to point in the *same direction* in every part of the circle. Is not this precisely analogous to the parallelism of the Earth's axis, in her revolution round the sun?

2. If, when the Paradox is suspended as in the preceding experiment, a weight is hung on one ear, the paradox *does not lose its balance*, but immediately begins to revolve horizontally, always stopping the instant the weight is removed. If the weight is hung on the other ear, the revolution is in an opposite direction.

3. If a slight horizontal motion is given to the arms, thus changing the plane of the wheel's rotation, the axis of the wheel will change vertically, and by a few movements of the arms *backwards and forwards* a *vertical revolution* of the Paradox will be produced.

This curious instrument is attracting much attention from scientific men; but, the causes of its action are not yet explained. Whoever shall account for them satisfactorily to himself, or shall discover new phenomena, will confer a favor by informing the undersigned. The originator of the Mechanical Paradox is Mr. Abner Lane, of Killingworth, who has arranged with the Holbrook School Apparatus Co., of Hartford, Conn., for its manufacture and sale. It will be sent, by express, to any person remitting the price, $5,00, 3,50, or 2,50, to

F. C. Brownell, *Sec'y*
Hartford, Conn.

OCCASIONS AND GATHERINGS.

CONVENTION OF NORMAL SCHOOL TEACHERS.

[At the close of the meetings of the American Institute of Instruction in Springfield, a Convention of Normal School Teachers was held, the following account of which we take from the Springfield Republican.]

A Convention of the teachers and friends of Normal Schools was held at the City Hall, on Thursday evening, July 21.

The assembly was called to order by WILLIAM H. WELLS, late of Westfield, now of Chicago, who gave a history of the movements that had led to the calling of the Convention, and the reasons for those movements. The meeting was not called for the purpose of determining the necessity of Normal Schools, ; that subject was settled ; but, as the very greatest and best results had followed the association of the teachers of other schools, the Normal School teachers wished to avail themselves of the benefits of association, that they might profit in the same way. On a call for the nomination of a chairman of the meeting, Mr. Conant, Principal of the Normal School in Bridgewater, was named and elected.

The chairman introduced, as the lecturer of the evening, RICHARD EDWARDS, Principal of the Salem Normal School, who proceeded to give a eulogy upon the life and character of Nicholas Tillinghast, the first Principal of the Normal School. It was an appreciative, discriminating, and affectionate tribute.

At its close, the announcement was made that the Convention would meet again the next morning at 9 o'clock, at Hampden Hall.

FRIDAY.

The Convention met according to adjournment at Hampden Hall, on Friday morning, at 9 o'clock. WM. F. PHELPS, of New Jersey, was appointed chairman, and J. W. DICKINSON, of Westfield, secretary. Prayer was offered by Rev. Mr. ORMISTON, one of the masters of the Normal School in Toronto, Canada; and the principal exercise of the morning was an address from the same gentleman.

Mr. Ormiston spoke of teachers and teaching. The patriarchs were the first teachers. Collecting around them their children and their children's children, — a multitude, — they told them the story of their lives, the history of their times, and the results of their experience. Then, as tradition grew dim, arose the poets, and when, at last, their creations paled and their uses ceased, they were succeeded by the prophetic seers, — by the schools of the prophets, — a splendid school of divine tuition. Then arose the philosophers, waked into being by the everlasting "why." But philosophy, in the estimation of the age and its cultivators, was only for the sun-lit mountain tops, while the valleys were still clothed in darkness. Following them appeared the world's Great Teacher, the great Teacher by preëminence. He came to teach men, and to teach the teachers of men. He taught the great truth that men do not exist in masses, but as individuals; and they must have borrowed a leaf from the Bible who ever wrote a profitable educational report. But Christianity met with opposition. Men began

to read the works left them by the philosophers, and through their reading became "doctors." These doctors did nothing for the people, but kept what they got. They were followed by the professors, who taught what and whom they chose to teach. These were succeeded by teachers. These teachers were what the speaker liked, for they bring their gifts to all. It is only, however, within the last century, that anything like general teaching has been practised.

Schools in Canada.

The speaker then passed to a consideration of the schools of Canada, as they existed but a few years ago, and especially to the low qualifications of school teachers. It became at last evident to the Canadian people that something must be done for the preparation of teachers for their work, and, in this sense of need, Normal Schools were originated. In 1816, something like a general system of education was established in Canada. This was very imperfect, but in 1850, a change in the municipal system was instituted on which has been based the present excellent school-system of Upper Canada. It is largely upon the Massachusetts basis, but knowing that the first model of a good thing is not always the best, the superintendent of public instruction travelled in Europe, and selected all the excellencies of other systems, and incorporated them with it; and he (the speaker) must testify that it worked admirably. There are, in round numbers, one million of inhabitants in Upper Canada, and there are, of children, between the ages of five and sixteen years, three hundred and eight thousand. Of these, two hundred and twelve thousand are in school, or two in every three. The schools number about three thousand five hundred. Of these, one thousand five hundred are free, and about fifty of them are separate, or Roman Catholic. There are paid out, in salaries to teachers, seven hundred thousand dollars annually. The total expenditure for schools is about one million of dollars. The Normal School at Toronto was established in 1847. Large and commodious buildings were erected, and there have been turned out of the institution about two thousand teachers. The proportion of male and female teachers is about three to two, or two-thirds males. Of those members of the institution who had previously been teachers, there were three times as many males as females. The females are, for some reason, in much the smallest demand. Of the two thousand who have been in the institution, five hundred have returned for a second term of instruction, and four hundred have received diplomas. The girls are admitted at sixteen years of age, and the young men at eighteen. In connection with the Normal School there is a model school of four hundred pupils. Into this school, classes of twelve Normal scholars are sent for observation and study, and the last term is spent there in actual service. One hundred thousand volumes have already been distributed to the public schools for libraries, from this school, which is the head-quarters of the educational interest, and four hundred thousand more will soon be distributed. Every intellectual and municipal interest is engaged in this great work, and he hoped to see the day when education would be as free as air to every child in Canada.

At the close of his address, the public meeting was adjourned. The teachers then permanently organized by the choice of the following officers:

President — WILLIAM F. PHELPS of New Jersey.

Vice Presidents — Messrs. CROSBY of Boston, BIGELOW of Framingham, and CAMP of Connecticut.

Executive Committee — Messrs. ORMISTON of Canada, COCHRAN of Albany, and COLBURN of Rhode Island.

Secretary — RICHARD EDWARDS of Salem.

Treasurer — J. W. DICKINSON of Westfield.

The remainder of the morning session was occupied by the heads of different Normal Schools in telling their experience and comparing notes.

AFTERNOON SESSION.

The session of the afternoon was occupied almost entirely by the various teachers in giving the history of their schools and the description of their management. Mr. Pierce, a venerable gentleman from West Newton, in accordance with a request made him in the morning, gave an account of the establishment of

THE FIRST NORMAL SCHOOL.

in this country, of which he was Principal. This was at Lexington, Mass., and the school was established under the auspices of the Massachusetts Board of Education. He found the building prepared for him in an unfinished condition, and to bring it into habitable shape had to do every thing himself. He had to go and get the carpenter and the mason, and the washerwoman to do the scrubbing. He entered it on the 3d of July, 1839, and soon afterwards it was opened for the reception of pupils. Notwithstanding the fact that the opening of the school had been advertised throughout the State, only three individuals appeared as applicants, though one was added soon afterwards. To save expense to the State, and thus secure, if possible, the perpetuation of the institution, he built his own fires, while the young ladies in attendance swept the building. He had no assistant for the first three years, though in that period the number in attendance had advanced to seventy. He was glad, in retiring from his labors, to leave his work in the keeping of such earnest spirits as he saw around him.

GENERAL TALK AND BUSINESS.

In the conversation upon Normal Schools, Prof. Ormiston wished t learn more of the practical benefits of model schools in connection with them. He therefore wished to have a question lie in the minds of the members of the Convention, for future discussion, which he gave in the following form: "The connection between Normal and Model Schools — whether beneficial or otherwise, and the why for either answer."

At 3 o'clock, Mr. Phelps of New Jersey came on with a lecture on the history of the formation of the Normal School in his own State.

Remarks upon the subject of Mr. Phelps's lecture were made by Messrs. Ormiston and Conant. The latter gave an account of the monitorial plan adopted in the Bridgewater school. Mr. Bulkley urged the appointment of a committee on an address to the people of the United States, and such a committee was instituted, consisting of Messrs.

Phelps, Ormiston, Calhoun, Edwards, and Camp. The time and place of the next meeting were referred to the executive committee, whose names have already been given. A special committee, consisting of Messrs. Conant, Camp, and Crosby, was appointed to prepare and report at the next meeting a constitution and by-laws for the Association. Mr. Pierce made some remaks on the usefulneess of experimental schools, and gave the results of his experience. Mr. Calhoun continued the discussion, pointing out what he considered a better practice for teachers than that furnished by model schools.

THE CLOSE AND THE RECORD.

This brought the meeting to a close. It has been a good one, and undoubtedly inaugurates a new power in the educational world, which is to be enlarged and perpetuated. The numbers present, of real teachers of Normal Schools, were few, and their names are worthy of record, as a matter of history. They are as follow: M. Conant, Bridgewater; George N. Bigelow, Framingham; Richard Edwards, Salem; Wm. F. Phelps, Trenton, N. J.; M. H. Doolittle, Trenton; J. W. Dickinson, Westfield; Rev. William Ormiston, Toronto, Canada; Rev. Cyrus Pierce, West Newton; P. A. Darling, Bridgewater; Alpheus Crosby, Boston; Dana P. Colburn, Providence; David N. Camp, New Britain, Ct.

QUESTION BOX.

ANSWER TO QUESTION 13. (JULY NO.)—The difference between two squares is equal to the product of the sum and difference of the two roots [$a^2 - b^2 = (a+b)(a-b)$]. If, then, the difference between two squares is 315, the difference of the roots may be 1 and the sum 315, making the roots 158 and 157; or the difference may be 3 and the sum 105, making the roots 54 and 51; or the difference may be 5 and the sum 63, making the roots 34 and 29; or the difference may be 7 and the sum 45, making the roots 26 and 19; or the difference may be 9, and the sum 35, making the roots 22 and 13; or the difference may be 15 and the sum 21, making the roots 18 and 3. We can go no farther, without introducing negative quantities. We have found, then, the roots of the 12 squares; and by observing the differences of these roots as stated in the problem, we find the number of square rods of land belonging to each person, and the relations of the parties to each other, to be as follows: A had 158^2, and his son M 157^2; B had 54^2, and his son G 51^2; C had 34^2, and his son H 29^2; D had 26^2, and his son K 19^2; E had 22^2, and his son I 13^2; F had 18^2, and his son L 3^2. Y. Z.

[QUESTION 14.] There is a rectangular field 60 rods long and 40 rods wide, within which it is proposed to make a race course. The inner boundary of the course is to consist of parallel straight sides 37 rods distant, and of two equal circular arcs at the ends of the course. The entire inner boundary of the course is to be half a mile long, and the space between it and the perimeter of the field is to be symmetrical.

Required the distance between the middle points of the two arcs. T. S.

[QUESTION 15.] A little book has been published in England for facilitating the process of multiplication by means of tables constructed upon a certain principle. We give below a few of the first columns, with an example performed by means of them. Can any of our readers discover the principle upon which they are constructed?

1 — 0	11 — 30	21 — 110	31 — 240
2 — 1	12 — 36	22 — 121	32 — 256
3 — 2	13 — 42	23 — 132	33 — 272
4 — 4	14 — 49	24 — 144	34 — 289
5 — 6	15 — 56	25 — 156	35 — 306
6 — 9	16 — 64	26 — 169	36 — 324
7 — 12	17 — 72	27 — 182	37 — 342
8 — 16	18 — 81	28 — 196	38 — 361
9 — 20	19 — 90	29 — 210	39 — 380
10 — 25	20 — 100	30 — 225	40 — 400

Thus: — What is 14 times 18? Solution: Sum = 32, difference = 4: the corresponding numbers are 256 and 4, whose difference gives the answer required, viz., 252.

[Question 16.] At the meeting of the British Association for the Advancement of Science, Prof. Stevelly read a paper on a new method of treating the doctrine of parallel lines. He stated that from the days of Euclid to the present, all geometricians admitted that Euclid's twelfth axiom was a property to be proved, and not an axiom to be assumed as self-evident; but hitherto no satisfactory and sufficiently elementary proof of it had been adduced. He then showed that by defining parallel lines to be "when two lines in the same plane were both perpendicular to the same line they should be called parallel," all the properties of parallel lines, as proved by Euclid, could be shown to belong to these by two supplementary propositions. The second of these was, that the line joining any two points along parallel lines assumed at an equal distance from the line to which both are perpendicular, formed right angles with each of the parallel lines. The author then went through the series of geometrical proofs. Can any of our readers reproduce them?

REVIEWERS' TABLE.

First Lessons in Philosophy; or the Science of Familiar Things: in which the Principles of Natural and Experimental Philosophy are systematically developed from the properties and uses of Familiar Things. By Thomas Tate, F. R. S. A. American Edition, revised and improved by C. S. Cartee, A. M., Principal of Harvard School, Charlestown. Boston: Hickling, Swan, & Brown. 12mo, pp. 252.

We need hardly say, after our article on the Teaching of Common Things in our last number, that we are rejoiced at the appearance of this little book, and wish it a wide circulation in Grammar and Primary Schools. It is just the book we could have wished to see in order to carry out the notions we there endeavored to advocate. It differs from the Natural Philosophies in common use, in its greater simplicity, and in the fact, (and this is its great excellence,) that it takes its illustrations from the simplest and homeliest details of the child's own experience. Thus in the Chemical chapter we have an account of charcoal, of vinegar, of ink, salt, and lead, a few simple experiments with sulphur, a plain description of the phenomena of combustion, of soap, lucifer matches, bleaching and dyeing, &c. In the chapter on Mechanics we have a picture and description of a door-lock, a plain account of levers illustrated by a crow-bar and a pair of scissors, — a corn-mill, a water-wheel, &c. Pumps, bellows, mirrors, pop-guns, spy-glasses, and the like, are pressed into the service of the other chapters to which they belong, in addition to a variety of more strictly scientific experiments, all of the simplest kind. Thus the communication is con-

stantly kept open between science and the child's own experience, and an indispensable foundation laid for further and more systematic study.

Such a book, of course, does not aim at completeness, though we should judge that some notice was taken of every important principle in physics. We are glad to see many questions asked and not answered. It will stimulate the ingenuity of the pupils, and perhaps compel the *teacher* to purchase and study a complete treatise.

There have been one or two previous attempts at such a school-book, but none that we have seen to be compared with this. A.

First Lessons in the History of the United States, compiled for the use of Common Schools, by a practical Teacher. 12mo, pp. 196. Boston: Hickling, Swan, & Brown.

This is a reasonably good summary of the leading events in the History of the United States, from the discovery of the continent to the administration of Franklin Pierce. Of course it is very brief, and we should be sorry to have the instruction in our common schools confined to it; but, supplemented, as it ought to be, by oral lessons from larger works in the teacher's or the school library, we should think it would serve a very good purpose as a text-book for younger classes. It is illustrated with two or three maps and a number of wood-cuts. A.

First Lessons in English Composition, by Mrs. Spencer Smith, of Mr. and Mrs. Smith's Female Seminary, St. Louis, Mo. 12mo, pp. 131. Boston: Hickling, Swan, & Brown.

Brief exercises, on the elliptical plan, for children as soon as they can write, spell, and define. "The second part introduces a few of the most common and easily understood parts of speech," and may serve as an elementary grammar. A.

Elements of Physical and Political Geography, designed as a Text-book for Schools and Academies, and intended to convey just Ideas of the Form and Structure of the Earth, the principal Phenomena affecting its outer crust, the Distribution of Plants, Animals, and Man upon its Surface, together with its present political Divisions. By Cornelius S. Cartee, A. M., Principal of Harvard School, Charlestown, Mass. 12mo, pp. 342. Boston: Hickling, Swan, & Brown.

Of all the School Geographies that we have ever seen in English, this is the most philosophical in its arrangement. The learner is first presented with definitions of geographical terms, a good deal more precise than those commonly given, together with a brief outline of the principal facts in Geology. A short chapter is then devoted to mathematical and astronomical elements, and then the physical geography of each continent is treated under the following heads — Extent and General Features, Mountain Systems (with profiles), Plateaus, Declivities and Plains, River Systems, Lakes, Geology. These chapters are followed by a comparative view of the different continents, and then come chapters upon Air and Water as envelopes of the Land, upon Heat, Electricity, and Magnetism, Climate, Winds, Rain, Ocean Currents, the Geographical Distribution of Plants, of Animals, and of Man. This concludes Part I, which occupies 216 pages. Part II is devoted to Political Geography, and includes the usual outline and statistics.

The superiority of this method over that of mingling all kinds of details, belonging to the same country, in one confused mass, needs hardly to be pointed out. By making a distinct study of each great geographical feature, it is clearly impressed upon the pupil's mind, while each separate subject in the first part may be taken up, if the teacher so pleases, in connection with that branch of Natural Science which throws light upon or explains it. The political division, connected as it properly is with moral and historical studies, forms a proper conclusion and completion to the study of the natural phenomena which preceded it. The one is the study of man's home; the other of man himself. It is strange that the jumbling together of such different subjects, under the very vague term Geography, should have been tolerated so long.

The typographical appearance of the book hardly does justice to the value of its contents.

The work is accompanied by an Atlas of Physical Phenomena, in octavo, containing seven maps, colored, to represent the surface outline of the different quarters of the globe, three devoted to Hydrology and Meteorology, and three illustrating the distribution of vegetable and animal life, and the races of men. The first seven are copies from the similar atlas of Johnston, and are fully equal to the originals. The whole atlas is very beautiful, and contains a great amount of information. Young pupils should be cautioned against taking the exaggerated mountain peaks on maps XI and XII for real representations. A.

CORNELL'S HIGH SCHOOL GEOGRAPHY AND ATLAS. New York: D. Appleton & Co.

This is a large duodecimo of about 400 pages, handsomely printed and illustrated with very well-executed wood-cuts. After a brief introduction of several lessons, occupying 20 pages, Part I, containing Descriptive Geography, occupies 300. Of these 150 are devoted to America, 80 to Europe, 25 to Asia, 23 to Africa, and 20 to Oceanica. Part II, containing Mathematical Geography, then follows, occupying the next ten pages, and the book concludes with a concise sketch of Physical Geography, occupying 60 pages more.

The descriptive part is made up upon the usual plan, and so far as we have examined it, appears to be carefully and judiciously compiled. The chapters are interspersed with map questions and review lessons. The task of bringing the geography of the world within the bounds of a single text-book must of necessity render the digest dry, and we are far from being in favor of restricting the study within such narrow bounds. Some guide, however, the teacher and scholars must have in the preparation of their lessons, and we know of none at present in the market superior in the getting up to this.

The atlas which accompanies it is on a larger scale than most school atlases, and is arranged on a novel, and what seems to us, a very excellent plan. It consists of two sets of maps, one for study, and the other for reference. In the former, only the most important places are set down, in the expectation that the map, freed from a multitude of petty details, will, with its important contents, be, as the author says,

daguerreotyped upon the pupil's mind. This set is then followed by a set of reference maps, filled in the usual manner, which will serve all the purposes of an ordinary atlas. The maps, especially those devoted to the United States and Europe, are very full, and very beautifully executed. We could have wished to see more justice done to Asia and Africa. As a whole, it is superior to any American school atlas we are acquainted with. A.

OUTLINES OF PHYSICAL GEOGRAPHY. By George W. Fitch. Illustrated by Six Maps and numerous Engravings. 7th large edition. 12mo, pp. 225. New York: J. H. Colton & Co.

This is one of the handsomest and most tasteful school-books that we have ever seen. It is printed on fine white paper, prettily bound, and profusely illustrated with excellent wood-cuts. Its arrangement is not so systematic as that of Mr. Cartée, and in its style and the treatment of the subject it is adapted to a younger class of pupils, devoting more space to the striking phenomena of nature, such as volcanoes, earthquakes, and waterfalls, and taking less pains in the development of scientific laws. Six very neatly executed double-page maps are included in the volume.

We rejoice to see the enterprise of our publishers thus devoted to giving a new development to the study of Geography. The publication of the books we have been noticing, and of others which we have not yet seen,* will, we trust, forever put an end to the old routine methods by which this most interesting, improving, and useful of studies has heretofore been deprived of all life. A.

INTELLIGENCE AND MISCELLANY.

SALARIES OF BOSTON TEACHERS. — At a recent meeting of the Boston School Committee, it was ordered that the Salaries of the Principals of the Latin, English High, and Girls' High and Normal Schools, be $2400 for the first year's service, with an increase of $100 for each additional year, till the salary reaches $2800; and that the masters now connected with the Latin and English High Schools be paid $2800: that the salaries of the sub-masters of the Latin and English High Schools, and of the masters of the Grammar Schools, be $1600 for the first year's service, with an increase of $100 each succeeding year till they amount to $2000: that those of the ushers of the High Schools, and of the sub-masters of the Grammar Schools, be $1200 for the first year, with an annual increase of $100 till they amount to $1800: that those of the ushers of the Grammar Schools be $800 the first year, with an annual increase till they amount to $1000: that those of the Primary School teachers, and of the female assistants in the Grammar Schools, be $300 the first year, with an annual increase of $50 till they amount to $450; that the first head assistant in the Normal School be paid $600; other assistants $500, and the head assistants in the Grammar Schools $500.

STUDY OF THE PHYSICAL SCIENCES. — It begins to be generally felt that among the faculties of mind upon the development of which in youth suc-

* We regret that a copy of Mitchell's Physical Geography has not reached us in season for notice with the works enumerated above. We have received a notice of its publication, but the copy which it promised has not yet come to hand. We hope to give an account of it in a succeeding number.

cess in after life mainly depends, there are some which are best improved through the cultivation of the Physical Sciences, and that the rudiments of those sciences are most easily acquired at an early period of life. That power of minute observation, — those habits of method and arrangement, — that aptitude for patient and laborious inquiry, — that tact and sagacity in deducing inferences from evidence short of demonstration, which the Natural Sciences more particularly promote, are the fruits of early education, and acquired with difficulty at a later period. It is during childhood also that the memory is most fresh and retentive, and that the nomenclature of the Sciences, which from its crabbedness and technicality often repels us at a more advanced age, is acquired almost without an effort.—*Dr. Daubeny's Address before the British Association for the Advancement of Science.*

Florence and Galileo. — There is much in every way in the city of Florence to excite the curiosity, to kindle the imagination, and to gratify the taste. Sheltered on the north by the vine-clad hills of Fiesole, whose Cyclopean walls carry back the antiquary to ages before the Roman, before the Etruscan power, the flowery city (Fiorenza) covers the sunny banks of the Arno with its stately palaces. Dark and frowning piles of mediæval structure; a majestic dome, — the prototype of St. Peter's; basilicas which enshrine the ashes of some of the mightiest of the dead; the stone where Dante stood to gaze on the campanile; the house of Michael Angelo, still occupied by a descendant of his lineage and name, — his hammer, his chisel, his dividers, his manuscript poems, all as if he had left them but yesterday; airy bridges which seem not so much to rest on the earth as to hover over the waters they span; the loveliest creations of ancient art, rescued from the grave of ages again to "enchant the world;" the breathing marbles of Michael Angelo, the glowing canvas of Raphael and Titian, museums filled with medals and coins of every age from Cyrus the Younger, and gems and amulets and vases from the sepulchres of Egyptian Pharaohs coeval with Joseph, and Etruscan Lucumons that swayed Italy before the Romans; libraries stored with the choicest texts of ancient literature; gardens of rose, and orange, and pomegranate and myrtle; the very air you breathe languid with music and perfume, — such is Florence. But among all its fascinations addressed to the sense, the memory, and the heart, there was none to which I more frequently gave a meditative hour during a year's residence, than to the spot where Galileo Galilei sleeps beneath the marble floor of Santa Croce; no building on which I gazed with greater reverence than I did upon the mansion at Arcetri, villa at once and prison, in which that venerable sage, by command of the Inquisition, passed the sad closing years of his life, — the beloved daughter, on whom he had depended to smooth his passage to the grave, laid there before him; the eyes with which he had discovered worlds before unknown, quenched in blindness:

> Ahime! quegli occhi si son fatti oscuri,
> Che vider piu di tutti i tempi antichi,
> E luce fur dei secoli futuri.

That was the house, "where," says Milton, (another of those of whom the world was not worthy,) "I found and visited the famous Galileo, grown old — a prisoner to the Inquisition for thinking on astronomy otherwise than as the Dominican and Franciscan licensers thought." (Prose Works, vol. I, p. 313.) Great heavens! what a tribunal, what a culprit, what a crime! Let us thank God, my friends, that we live in the nineteenth century. Of all the wonders of ancient and modern art — statues and paintings, and jewels and manuscripts — the admiration and the delight of ages — there was nothing which I beheld with more affectionate awe, than that poor rough tube, a few feet in length — the work of his own hands — that very "optic glass" — through which the "Tuscan Artist" viewed the moon,

> "At evening from the top of Fesole
> Or in Valdarno, to descry new lands,
> Rivers, or mountains, in her spotty globe,"—

that poor little spy-glass (for it is scarcely anything more) through which the

human eye first distinctly beheld the surface of the moon, — first discovered the phases of Venus, the satellites of Jupiter, and the seeming handles of Saturn, — first penetrated the dusky depths of the heavens, — first pierced the clouds of visual error, which from the creation of the world involved the system of the universe.

There are occasions in life in which a great mind lives years of rapt enjoyment in a moment. I can fancy the emotions of Galileo, when, first raising the newly constructed telescope to the heavens, he saw fulfilled the grand prophecy of Copernicus, and beheld the planet Venus crescent like the moon. It was such another moment as that when the immortal printers of Mentz and Strasburg received the first copy of the Bible into their hands, the work of their divine art; like that when Columbus, through the gray dawn of the 12th of October, 1492, (Copernicus, at the age of eighteen, was then a student at Cracow,) beheld the shores of San Salvador; like that when the law of gravitation first revealed itself to the intellect of Newton; like that when Franklin saw, by the stiffening fibres of the hempen cord of his kite, that he held the lightning in his grasp; like that when Leverrier received back from Berlin the tidings that the predicted planet was found.

Yes, noble Galileo, thou art right, *E pur si muove.* "It does move." Bigots may make thee recant it; but it moves nevertheless. Yes, the earth moves, and the planets move — and the mighty waters move — and the great sweeping tides of air move — and the empires of men move — and the world of thought moves, ever onward and upward to higher facts and bolder theories. The Inquisition may seal thy lips, but they can no more stop the progress of the great truth propounded by Copernicus and demonstrated by thee, than they can stop the revolving earth.

Close now, venerable sage, that sightless, tearful eye; it has seen what man never before saw; it has seen enough. Hang up that poor little spy-glass; it has done its work. Not Herschel nor Rosse have comparatively done more. Franciscans and Dominicans deride thy discoveries now, but the time will come when from two hundred observatories in Europe and America, the glorious artillery of science shall nightly assault the skies, but they shall gain no conquests in those glittering fields before which thine shall be forgotten. Rest in peace, great Columbus of the Heavens! like him scorned, persecuted, broken-hearted, in other ages, in distant hemispheres, when the votaries of science, with solemn acts of consecration, shall dedicate their stately edifices to the cause of knowledge and truth, thy name shall be mentioned with honor. — *Everett's Address at the Inauguration of the Dudley Observatory.*

Experience in Teaching. — Education is a thing which concerns every body, and therefore, by a common fallacy, everybody thinks he understands it, and thinks his own opinion on it as good as any one's else. Hence multitudes of persons who have never made this subject their actual *study*, yet consider themselves at liberty to write, (that is, to instruct the public,) on it. Now on the subject of gunnery, or dancing, or shooting, or military tactics, this is not the case; every one is not concerned in these as he is in education, and hence it is not every one who has, or even thinks he has an opinion on them. Education, however, is a thing which every one is in some way or other connected with or interested in; and every person, therefore, who has thought a little more than others about it, though he may never have *done* anything at all in it practically, regards himself as competent to teach teachers how to teach, and to instruct instructors in the art of instruction. But in education as in religion, practice is as necessary as study; as Cicero says, "non satis est *habere* virtutem quasi artem aliquam, nisi *utare.*" Act and you will learn. All preachment apart from practice is *vox et praeterea nihil*, worth nothing. — *Eclectic Review.*

"We have taken into our family for six months, and perhaps longer, a young Spaniard, who comes solely to learn English. * * * Did you ever see *segnars*, — leaf tobacco rolled up the length of one's finger, which they light and smoke without a pipe? — he uses them."— *Mrs. Barbauld to Dr. Aikin, A. D.* 1787.

Westfield Normal School.—We are happy in being able to state that the vacancy in this flourishing School, made by the resignation of Mr. Wells, its late Principal, has been filled by the appointment of Mr. John W. Dickinson, who has been for four years the first associate Teacher in the School. Mr. Dickinson, though less generally known through the State than he ought to be, is pronounced by those who are acquainted with him, to have eminent qualifications for the place. He was born, if our memory serves us, upon the green hills of Chester, in Hampden County, but early removed, with his parents, to Williamstown. He received his education, prior to entering College, chiefly in the schools of this town, and in the excellent Seminary at East Hampton, which bears the name of its great-hearted founder, Mr. Williston. He was graduated at Williams College, with high reputation as a scholar, in the year 1852. He had before had the experience of five winters in common school teaching; and immediately upon his graduation, was appointed an instructor in the Westfield Normal School, of which Mr. Rowe was then Principal. A large part of the valuable results of this School during the last four years is due to Mr. Dickinson's able, thorough, and philosophical teaching, and to the daily influence of his scholarship, spirit, and life. He has also, during two interregnums, given full proof of his qualifications for the general care and conduct of the school. We anticipate for him eminent success and usefulness in his new, and yet familiar position; and welcome him most cordially to the honored corps of our Normal School Principals. C.

Written in a Little Lady's Little Album.

Hearts good and true
Have wishes few—
  In narrow circles bounded;
And hope that lives
On what God gives,
  Is Christian hope well founded.

Small things are best;
Grief and unrest
  To rank and wealth are given;
But little things,
On little wings,
  Bear little souls to Heaven. — From Poems by Rev. F. W. Faber.

EDITORIAL POSTSCRIPT.

October, 1856.

We have received from our friend and absent editor, Prof. Crosby, an account of the meeting of the New Hampshire State Teachers' Association.

The article signed "Xarissa," is received, and is very acceptable.

We have also received an article from Brewster.

With these and other articles which we hope to receive, we shall be able in our next to show a greater variety in our list of contributors.

We have been favored by Messrs. Robinson & Richardson, 119 Washington street, with a box of the "Ladies' and Ledger" steel pen, made by the American Steel Pen Co., of which they are the agents, with a request that we would notice them. As we cannot exactly "review" them, we will say here that they are fine-pointed, elastic, and durable. For fine writing we like them better than any pen we have used for a long time.

Lest we should not be able to turn it to an educational account, we also here return our thanks to our friends, Messrs. Ide & Dutton, for a copy of Mrs. Stowe's much-sought-for book, Dred. A.